VOL. LXXXII PART FIVE

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

MAY 1957

PAGE

The Secretary's Page 185

Arrangements for Chelsea Show, 1957 187

Notes from Wisley. By J. B. PATON 190

Longwood Gardens: A Twentieth-century American Pleasure Ground. By LANNING ROPER. *Illustrated* . . 193

Labour Saving in the Garden. Part II. By MARGERY FISH, Brig. C. E. LUCAS PHILLIPS, O.B.E., MICHAEL HAWORTH-BOOTH. *Illustrated* 201

NOTES FROM FELLOWS:

Sarcococca hookeriana. By The Hon. L. PALMER, F.L.S., V.M.H. and J. R. SEALY, F.L.S. . . 213

The Cork Oak (*Quercus suber*). By G. S. THOMAS, F.L.S. *Illustrated* 214

The Fruiting of *Akebia quinata* at Wisley. By W. SYKES, N.D.H. *Illustrated* 215

Plants and Problems—XXXIII 216

Plants to which Awards have been made in 1956 and 1957 217

Camellia 217

Chrysanthemums 217

Orchids 225

Book Notes 226

★

VINCENT SQUARE, LONDON, S.W.1

EASY AS TRIPPING ON A RAKE!

SAYS BOB GREEN
our gardening expert

If your Asters always wilt and your Stocks and outdoor tomatoes sag at the knees, don't blame the seedlings! You can bet your boots there's disease in your soil—sterilise it first and you'll find these plants as easy to grow as a crop of dandelions!

The time for this simple but really essential job is while you're preparing the beds, at least a fortnight before you plant out summer bedding plants or outdoor tomatoes. You needn't make hard work of it—just sterilise as you dig!

All you need is a can of Jeyes' Fluid. Yes, Jeyes' the disinfectant—it's just as effective in killing disease in the garden as round the house. Powerful stuff, this Jeyes', but safe in use—it won't harm your hands or clothes.

Soak each trench with one tablespoon of Jeyes' per gallon of water; and soak the top spit too, as you throw it over. Use at least a gallon of solution per square yard, so that it penetrates well into every particle of soil.

At least 14 days before use or covering with glass, sterilise the soil for cloche work too. You'll find full details of these jobs, and many others, in "Jeyes' Fluid in the Garden".

WRITE *(block capitals) for free copy of new, revised edition of "Jeyes Fluid in the Garden".*

NEW! *Gardening book "ALL GROWS WELL" by FRED LOADS, describing in detail the way to success with flowers, fruit, vegetables, greenhouses, lawns etc., etc —4/6d post free.*

Quart cans 8/- Gallon cans 15/-.
Trial bottle 1/10d — from hardware stores, horticultural suppliers, chemists and grocers

JEYES' FLUID

the best disinfectant on earth

JEYES' (DEPT. H.S.20) • RIVER RD • BARKING • ESSEX

EN-TOUT-CAS

EXPERTS IN THE DESIGN AND CONSTRUCTION OF ALL KINDS OF HARD COURTS AND SPORTS GROUNDS

HARD COURTS
Used for the British Hard Court Championships at Bournemouth and first-class tournaments throughout the country.

RUNNING TRACKS
Including Melbourne; White City, London and Manchester; Oxford University Athletic Club's ground, Iffley Road, Oxford; R.A.F. Halton and Innsworth; also Marlborough and Shrewsbury Schools, etc.

SQUASH COURTS
Sole makers of Carter's and En-Tout-Cas courts, which can now be economically and speedily constructed.

CRICKET PITCHES
"BITUTURF" Practice Pitches supplied to County Cricket Clubs, Corporations, Business Clubs, Colleges and Universities, etc.

SWIMMING POOLS
Designed and made for Schools, Men's Clubs and many private purchasers.

PRICE LIST
Published annually (92 pp.) of all kinds of Grass Seeds, Fertilisers, Sports Ground Equipment and Accessories (please send for this).

Booklets, Layouts, Specifications and Estimates from

THE EN-TOUT-CAS CO. LTD., SYSTON, Nr. LEICESTER

(*Telephone: Syston* 86163-4-5-6)

*London Office: Harrods (4th Floor), Knightsbridge, S.W.*1. (*SLOane* 8117-8)

PERMACOLOR

COLOURED ROOFING FELT

RED or GREEN

per **17/-** roll
12 yds. x 1 yd. wide

FOR BRIGHTER ROOFS

DUSTLESS and CLEAN TO HANDLE
DURABLE and ECONOMICAL

ALSO "DURAFLEX" GREY ROOFING FELT
From 6/9 per 6 yds. x 1 yd. roll

There is only one
PERMACOLOR
ask for it by name

AVAILABLE FROM IRONMONGERS AND BUILDERS' MERCHANTS

MANUFACTURED EXCLUSIVELY BY PERMANITE LTD

"LEONARDSLEE" HORSHAM

SIR GILES LODER, BT.

will open the Garden on

WEDS., MAY 8th, 15th, 22nd, 29th

THURS., MAY 9th, 16th, 23rd, 30th

SATS., MAY 4th, 11th, 18th, 25th, June 1st

Admission 2/– Car Park 1/– Tea

Every Sunday in May and June 2nd

Admission 2/6 Car Park 1/– No Teas

10 a.m. to 7 p.m. No Dogs

FLOWERS and their HISTORIES

By Alice M. Coats

Of all the arts and sciences connected with gardening, history has been the most neglected. This book covers the history of some six hundred of the more familiar flowers, with eight colour plates and other interesting reproductions which are now of great rarity. "The only way to do full justice to it would be by extensive quotation . . . it is easily among the most entertaining and learned books that have recently come my way" (Review in the Journal of the Royal Horticultural Society).

340 *pages* 30/–

The Housewife Book of HOUSE PLANTS

By Xenia Field

This is a comprehensive guide to choosing and caring for over 180 kinds of house plants by a well-known expert who writes regularly for a national newspaper and HOUSEWIFE magazine.

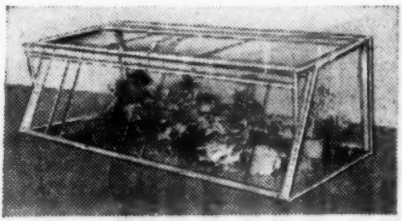
128 *pages* 8/6

Obtainable from booksellers or from Book Sales Dept. HJ,

HULTON PRESS

Fleet Street, London, E.C.4

FOR EARLY CROPS INSIST ON A



Pluie Garden Frame

★ INSTANTANEOUS OPENING FOR RAIN, WITH SIDE PROTECTION ★ PERFECT VENTILATION
★ MAXIMUM LIGHT ★ NO BOLTS OR PUTTY

PLUIE SPAN Size 4 ft 9 in. long, 29 in. wide, 20 in. high at back. Price complete with ends .. .. £6 - 16 - 0
Extension without ends .. .. £5 - 16 - 0
Carriage, 5/–

PLUIE MAJOR Size 4 ft 9 in. long, 4 ft wide, 20 in. high centre. Price complete with ends .. .. £9 - 16 - 0
Extension without ends .. .. £8 - 6 - 0
Carriage, 10/–

Send for leaflets and a free cropping plan

POULTMURE LTD. (DEPT. H.S.)
5 COLLEGE ROAD, HARROW, MIDDLESEX

WALTER C. SLOCOCK, Ltd.

FOR OVER 160 YEARS

RHODODENDRON SPECIALISTS

AND PRODUCERS OF FIRST-QUALITY

ORNAMENTAL TREES AND SHRUBS, FRUITS, ROSES, Etc.

Please write for copies of our

CATALOGUES

"RHODOS and AZALEAS" and/or "TREES and SHRUBS"

(Post Free)

GOLDSWORTH NURSERY
WOKING .·. SURREY

It's Feeding Time for PLANTS

** Products which give the pleasure of SUCCESS with 'armchair' ease.*

Plants, like children, love mealtimes, and how they grow if you feed them regularly. Glowing blooms, succulent vegetables, luscious fruit — real prize exhibits in your own garden! This year feed them with *BIO PLANT FOOD*, the natural food for plants in concentrated form — a rich brown liquid extracted from natural humus, containing added nutrients and the essential trace elements for plant health.

Prices from 2/- per 8-oz. bottle

N.B. When planting out and sowing use BIO Humus. BIO Humus creates moisture-retaining, well aerated conditions to encourage root development, the ideal for feeding on with BIO Plant Food. Put a handful under each plant when planting out.

FROM YOUR LOCAL GARDEN SHOP

Bio PLANT FOOD

feeds plants NATURALLY

PAN BRITANNICA INDUSTRIES LTD., WALTHAM ABBEY, ESSEX

One of the Tennant Group of Companies

THE STORY OF

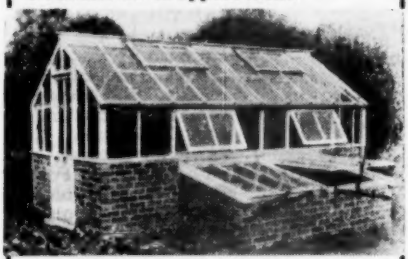
STRAWSON GREENHOUSES

Construction

After Survey and Planning come the selection of materials, but it is in the actual making of the Greenhouses that the name Strawson really became famous. For only highly-skilled craftsmen are employed and each one has a lifetime's experience behind him – it is this combination of fine workmanship and first-class materials which guarantees the completely satisfactory conclusion of every job.

Each piece of timber is cut and fitted individually, and all Greenhouses are completely erected at the Works prior to dispatch; every section is then thoroughly inspected by experts, and only a 100% pass through the final examination will release the Greenhouse for delivery, thus ensuring a perfect fit when erected on the actual site.

Interested customers are very welcome to see for themselves how the finest Greenhouses in the Country are made, by writing or 'phoning Mr. Strawson for an appointment.



"A Personal Service"

Enquiries should be addressed to Mr. R. F. Strawson who will *personally* send estimates and full particulars of the famous Strawson range of Greenhouses, Frames, Greenhouse Heating, and other valuable information.

SEE OUR EXHIBITS
at the Chelsea Flower Show

G. F. STRAWSON & SON, HORLEY, SURREY *Tel.:* Horley 130

a

REVOLUTION

in SHEARS

the

EDGING SHEAR

PRICE
60/-

Your lawn may be perfectly mown, but it will still look untidy if its edges are badly trimmed. This Wilkinson Sword long-handled Edging Shear, with its hollow-forged, rust-resisting blades and tubular steel handles will really make this necessary but irksome job a pleasure, so successfully has the combination of lightness with strength been achieved in this fine instrument. Also incorporated is an adjustable "floating" bearing that, using no spring ensures a smooth, easy action.

WILKINSON SWORD

WILKINSON SWORD LIMITED, LONDON, W.4

Britain's Finest Gardening Weekly

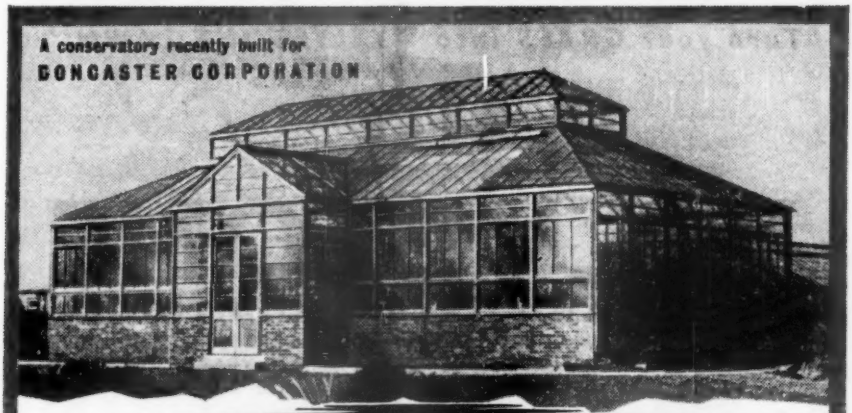
You will enjoy gardening with Gardeners Chronicle and Gardening Illustrated. It is the finest gardening aid you can buy. For all gardeners, it is packed with new ideas and expert information. Its pages for women, students and specialists are an added attraction.

Reading it is like gardening with a friendly expert at your elbow. For only 6d. a week, the skill and experience of Britain's leading horticultural team are at your service. Try it today.

From all newsagents. In case of difficulty please write to:

THE GARDENERS' CHRONICLE LIMITED

Printing House Square, Queen Victoria Street, London, E.C.4



W. RICHARDSON

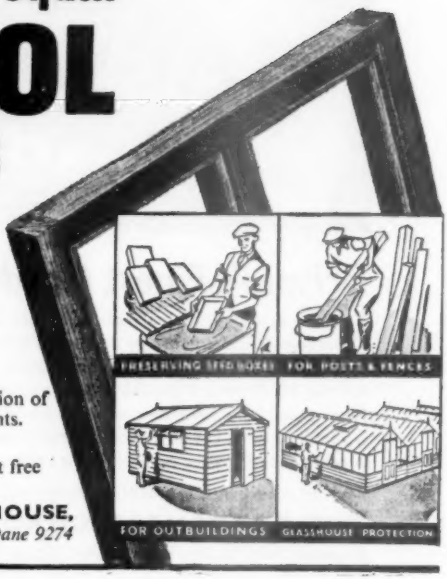
AND Co LIMITED

Est. 1876

HORTICULTURAL AND HEATING ENGINEERS

Neasham Road, DARLINGTON · 117 Victoria Street, LONDON, S.W.1

There's nothing to equal
CUPRINOL
WOOD PRESERVERS



GREEN—CLEAR—DARK BROWN
Prevent decay in timber. Prevent attack by Woodworm. Stamp out Dry Rot.
Can be polished or varnished and Green and Clear can be painted over. *Green Cuprinol must be used for timber in contact with growing plants.*

HEAVY DUTY BROWN
For protection of exterior timber only.

CUPRINOL DIP for Nurseries
Supplied in 5 and 40 gallon drums. For preservation of seed and bulb boxes, stakes, canes and Dutch lights.

CUPRINOL GLASSHOUSE REFLECTANTS
These preservative paints are described in a leaflet free on application.

CUPRINOL LTD. Dept. 16, TERMINAL HOUSE, VICTORIA, LONDON, S.W.1 *Phone: SLOane 9274*

Turn your GRASS into "VELVETONE LAWN"

VELVETONE
THE ORGANIC LAWN CONDITIONER

Extensively used by GREENKEEPERS for PUBLIC PARKS, SPORTS GROUNDS. USED NOW AND FOR MANY YEARS PAST ON THE ROYAL LAWNS AND ENCLOSURES AT ASCOT

I.T.P. VELVETONE is formulated on a colloidal organic base. It contains all the plant foods required for the healthy growth of finer grasses in exactly the right proportion, in a series of phases becoming available in succession. Besides the major plant foods there are various trace elements essential to the growth of hard-wearing fibre. I.T.P. VELVETONE discourages moss and fungal growth, and because of its exact composition it causes grasses to smother out and take over from weeds thus ensuring that there are no bare patches. Regular use improves the physical condition of the soil with each application—a unique feature of Velvetone, making each successive dressing more effective than the preceding one and keeping the lawn healthy and green even in drought. Velvetone is most economical, only 2 oz. per square yard is required.

4-lb. bag 4/- 7 lbs. 5/6 14 lbs. 10/6 1 cwt. 48/-

FROM ALL GOOD RETAILERS
INTERNATIONAL TOXIN PRODUCTS LTD., NORTHWICH, CHESHIRE

three stands at the Chelsea show!

on our gardening equipment stand no. 2 eastern avenue

you'll find yet another really first-rate mower from Suffolk – the 'Pony'. amazingly low priced, fully self-propelled, dual drive, grass box, sensible adjusters, totally enclosed transmission and a Suffolk-designed 50 c.c. motor with excellent cooling characteristics. The one-lever control (clutch is automatic) makes the 'Pony' particularly easy to handle: ideal for lady gardeners. 12″ cut. **25 gns** complete

on our garden furniture stand southern road

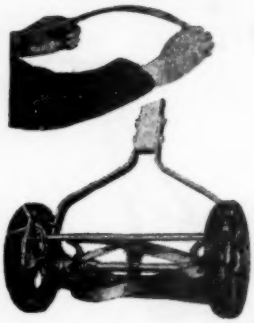
We are also showing a really superb range of garden furniture. One of the outstanding exhibits: the 'Featherwate' chair – weighs a mere 5 lbs. but solidly comfortable. Rustless polished aluminium alloy frame, cadmium-plated joints with self-locking nuts. Polished wood arms. Covering of 'Tygan' – rot, fade and waterproof – in red/green, blue multi-stripe, red herringbone, green/yellow Regency stripe. Folds 5½″ flat. 90/6 carriage 4/–

and a special horticultural book stand no. 1 eastern avenue

Army & Navy Stores

VICTORIA STREET SW1 · VICTORIA 1234 DAY & NIGHT

THE "FLEXA" MOWER



Different in construction from other mowers, the shear blades and the cutting knives of the Flexa are made of thin steel strips which allow flexibility in operation. Having a "shaving" cut, the Flexa does not "pull" the grass, and will cut it easily when wet, rough, or as high as 10".

Used in Wisley Gardens for many years

Prices from £8.0.0 plus P.T.

Please write for particulars to:—

The FLEXA Lawn Mower Co. Ltd.

Guildford Road, Woking, Surrey

THERE IS ONLY ONE GENUINE ORIGINAL

STRAWBMAT

and we make it—so

IMAGINE THIS IS A STRAWBERRY

It is unblemished by slugs or grit. You can always pick fruit like this if only you will use **STRAWBMATS** instead of loose, untidy straw. You will also get them earlier. Why not **CHEAT THE SLUGS** and trap the sun's heat? As recommended by Adam the Gardener, see *Sunday Express* 20/5/51, and Mr. Middleton's Gardening Guide, and as supplied to the Country Gentlemen's Association.

NOTHING CHEAPER CAN BE BOUGHT
NOTHING BETTER CAN BE GOT

Preferably obtain from your local dealer:

BEWARE OF IMITATIONS

27/– for 36 12" mats.
36/– for 36 18" mats.
54/– for 36 21" mats.
72/– for 36 24" mats.

OR, if time does not press, send S.A.E. for our beautiful folder* to:

STRAWBERRY PROTECTION CO.,

52, LANIVET, BODMIN, CORNWALL

* After seeing this you will realise the advantages of Strawbmats in a flash—they should last you for five years!

The Water Garden

A twenty-page illustrated handbook describing the finest hardy

Water Lilies
Aquatics
Marginal Plants
Oxygenators
Floating Plants
Waterside and
Bog Plants

and how to grow them.

A new edition of *The Water Garden* is now ready. Send 6d. (stamps) to

Stewarts NURSERIES

FERNDOWN DORSET

TENNIS COURTS AND SPORTS GROUNDS

FOR OVER 30 YEARS
THE SURFACE FOR SERVICE

GRASSPHALTE LTD

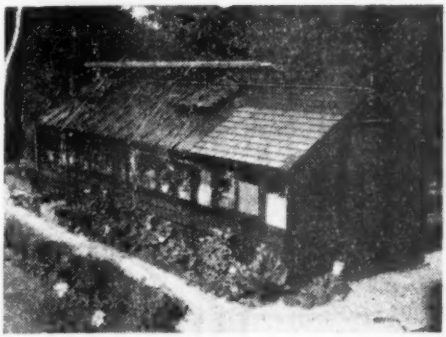
HAMPTON HILL, MIDDLESEX

Molesey 4343–4–5

C. H. WHITEHOUSE
LIMITED

'Phone: FRANT 247

Buckhurst Works, Frant, Sussex



The ALL-CEDAR 'EXTENDIBLE UNIT' GREENHOUSE with POTTING SHED

The perfect combination for the amateur gardener. The Greenhouse is supplied complete with stagings, and may be extended at any time by additional units of 6 ft. or 12 ft. long by 8 ft. wide. The Potting Shed with Cedar Shingle roof is provided with a well-lit potting bench, and may be used to house the boiler if required.

Painting Unnecessary · Low in Upkeep Costs

Visit our stand, No. 6, in Northern Avenue at the Chelsea Flower Show

---

Saves Time, Saves Labour

The 'Swing' all-purpose WATER CART carries anything, liquids and solids—Feeds, Fertilizers, Manure, Chemical Sprays—without waste or splash. Light, easy to handle—but very sturdily constructed. Tips easily. Heavily Galvanized Container, Welded Tubular Steel Frame, Solid or Pneumatic Rubber Tyred or Unbreakable All-Steel wheels.

6 sizes—15 to 50 gallons.

(Reg. Des. No. 854724)

Stocked by Geo. Monro, Carters, Suttons and all good horticultural sundriesmen.

ALFRED ALLEN & SON LTD.

Lower Gornal, Nr. Dudley

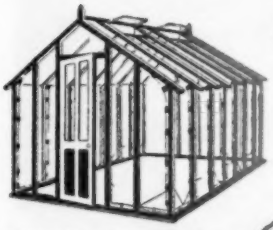
London Office: 23 Lawrence Lane, E.C.2. *Tel:* Monarch 2978

557C

OAKWORTH

SEASONED OAK GREENHOUSES

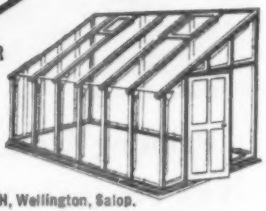
"ZZ" Series. All 5' 2" wide, from £20.10.0.



"D" Series. All 8' 3" wide, from £37. 5. 0.

5 YEAR GUARANTEE

Lean-to's. Various widths, from £20.5.6



★ SCIENTIFICALLY CONSTRUCTED TO GROW MORE AND LAST LONGER
★ TREMENDOUS STRENGTH ★ MAXIMUM LIGHT
★ WILL NOT WARP OR ROT ★ ALL MODELS EXTENDIBLE

Complete prefabricated units. Delivered free to your door. Erected on delivery. Deferred Terms. Full details of prices and 50 sizes available in:

FREE CATALOGUE from Oakworth Greenhouses, Dept. JRH, Wellington, Salop.

THE NATION'S GREENHOUSE SPECIALISTS

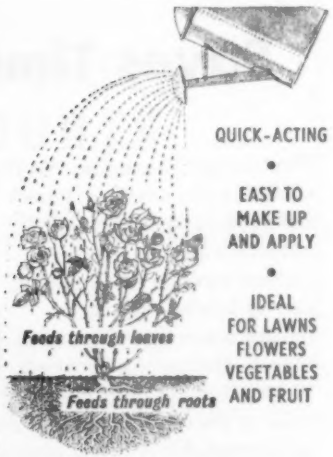
WELGRO

THE MIRACLE FERTILIZER

makes plants grow like magic!

The amazing results obtained with Welgro are produced in a perfectly natural way by providing plants with all the food they need in liquid form which the roots and the leaves commence to absorb immediately.

Give your plants a REAL chance to show what they can do—feed them with Welgro, the fertilizer that solves all fertilizer problems.



QUICK-ACTING
•
EASY TO MAKE UP AND APPLY
•
IDEAL FOR LAWNS FLOWERS VEGETABLES AND FRUIT

Note reduced prices–

Popular Prices **1/9** and **3/6**

1½ lbs. 10/6 3 lbs. 19/- 6 lbs. 32/-

The reduced prices are due to improved packing facilities. The size of the packs and the unrivalled Welgro Formula remain unaltered.

Welgro is obtainable from your local seedsman, garden supply shop, and through "Boots the Chemists".

GUARANTEED ANALYSIS

3 Major Plant Foods	Nitrogen	15%
	Phosphoric Acid	33%
	Potash	15%
7 extra Minerals (trace elements)	Magnesium	0.49%
	Manganese	0.18%
	Iron	0.15%
	Copper	0.05%
	Zinc	0.06%
	Boron	0.04%
	Molybdenum	0.009%

GARDEN FERTILIZERS LTD. 40, Chorlton St. Manchester 1

JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY

VOL. LXXXII PART FIVE

May 1957

THE SECRETARY'S PAGE

ANNOUNCEMENTS—MAY AND JUNE

Shows—The Society's Fortnightly Shows are held in the Society's New Hall in Greycoat Street and/or the Old Hall in Vincent Square, Westminster.

TUESDAY, April 30 12.30 P.M. to 6 P.M. WEDNESDAY, May 1 10 A.M. to 5 P.M.	Fortnightly Flower Show, and National Rose Society's Competition in the Old Hall. Rhododendron Show in the New Hall. National Auricula and Primula Society's Competition (May 1 only) in a Committee Room in the New Hall.
TUESDAY, May 21 to FRIDAY, May 24	Chelsea Show.

For details see pp. 187–189.

TUESDAY, June 4 12 NOON to 6 P.M. WEDNESDAY, June 5 10 A.M. to 5 P.M.	Fortnightly Flower Show, Cactus and Succulent Society's Competition and Geranium Society's Competition in the New Hall. British Iris Society's Show in the Old Hall.
TUESDAY, June 18 12 NOON to 6 P.M. WEDNESDAY, June 19 10 A.M. to 5 P.M.	Fortnightly Flower Show, Flowering Tree and Shrub Competition, Cactus and Succulent Competition for Amateurs (Sherman Hoyt Trophy), and British National Carnation Society's Competition in the New Hall.

Shows—*continued*

TUESDAY, June 25 12 NOON to 7 P.M.	National Sweet Pea Society's Show in the New Hall.
FRIDAY, June 28 11 A.M. to 7 P.M. SATURDAY, June 29 10 A.M. to 5 P.M.	National Rose Society's Show. (Both Halls on June 28, New Hall only on June 29.)

Lectures

TUESDAY, June 4, at 3 P.M. "Irises for every Garden", by MR. H. J. RANDALL, C.B.E.

TUESDAY, June 18, at 3 P.M. "Gardening on Chalk", by SIR FREDERICK STERN, O.B.E., M.C., F.L.S., V.M.H.

Demonstration at Wisley—On May 15 there will be a demonstration on the summer pruning of shrubs, commencing at 2 P.M. The demonstration will be repeated at the same time on May 16.

Lily Group Meeting—The Lily Group will hold its second meeting of the year in the Restaurant of the Old Hall at 4.30 P.M. on Tuesday, June 18, when there will be a discussion on "The Genus Erythronium".

Gardeners' Sunday—A scheme was inaugurated last year which it is hoped will make a special appeal to Fellows of The Royal Horticultural Society. The plan is to have each year one particular day on which gardens throughout the country will be opened to the public in aid of the two gardening charities. The day selected is the last Sunday in June each year, and it is already becoming widely known as "Gardeners' Sunday".

The two gardening charities are the Gardeners' Royal Benevolent Institution which looks after aged gardeners and their widows, and the Royal Gardeners' Orphan Fund which cares for gardeners' orphans. The scheme is organized by a joint committee of the two organizations.

"Gardeners' Sunday" has the sympathy of the Committee of the National Gardens Scheme of the Queen's Institute of District Nursing as it is appreciated that the National Gardens Scheme owes much of its success to the goodwill and co-operation of gardeners.

Fellows who are prepared to open their gardens on "Gardeners' Sunday"—the last Sunday in June—are invited to communicate with the Secretary, "Gardeners' Sunday", 92 Victoria Street, London, S.W.1. It is also hoped that many Fellows and their friends will support the gardening charities by making a point of visiting gardens which are opened under the scheme. A booklet giving particulars of such gardens may be obtained from the above-mentioned address, price 6*d*., by post 8*d*.

ARRANGEMENTS FOR CHELSEA SHOW, 1957

Chelsea Show will, as usual, be held in the grounds of the Royal Hospital, Chelsea, London, S.W.3.

Private View – There will be a Private View on Tuesday, May 21, from 8.30 A.M. to 8 P.M., open only to Fellows and Associates on surrender of the special *detachable* parts of their annual tickets. For details please refer to the paragraph relating to Fellows', Overseas Fellows' and Associates' tickets.

In no circumstances, by payment or otherwise, can extra admissions to the Private View be allowed.

Dates of Show – The Show will be held on Wednesday, Thursday and Friday, May 22, 23 and 24.

Times – Fellows and Associates

Fellows, Associates, and those presenting Fellows' Transferable Tickets are admitted free of charge during the following periods:

Wednesday, May 22	8.30 A.M. to 8 P.M.
Thursday, May 23	8.30 A.M. to 8 P.M.
Friday, May 24	8.30 A.M. to 5 P.M.

The Public

The charges for admission are:

Wednesday, May 22	8.30 A.M. to 8 P.M.	– 15*s.*
Thursday, May 23	8.30 A.M. to 8 P.M.	– 7*s.* 6*d.*
Friday, May 24	8.30 A.M. to 12 NOON	– 5*s.*
	12 NOON to 5 P.M.	– 2*s.* 6*d.*

In no circumstances can admission be gained at any time on Tuesday, May 21.

Admission of Children – Children under five years of age cannot be admitted. The charge for the admission of children of five years and over will be the same as for adults.

Parties – No reduction in the price of admission can be made for parties of visitors, but tickets may be obtained beforehand to save trouble on arrival. Application, accompanied by a remittance to cover the cost of the tickets required, should be made to the Secretary, The Royal Horticultural Society, Vincent Square, London, S.W.1, early in May. Such applications *must* reach the Secretary not later than the first post on Friday, May 17.

Fellows', Overseas Fellows' and Associates' Tickets – A Fellow subscribing 4 guineas annually receives 1 non-transferable and 5 transferable tickets. The non-transferable ticket has a *detachable* portion which will admit only the Fellow to whom it is issued and one other person to the Private View on May 21.

A Fellow subscribing 3 guineas annually receives 1 non-transferable and 2 transferable tickets. The non-transferable ticket has a *detachable* portion which will admit only the Fellow to whom it is issued and one other person to the Private View on May 21.

A Fellow subscribing 2 guineas annually receives 1 transferable ticket. This ticket has a *detachable* portion which will admit only the Fellow to whom it is issued to the Private View on May 21.

An Overseas Fellow when on a visit to the United Kingdom can obtain, on application to the Secretary at the Society's office in Vincent Square, London, S.W.1, a non-transferable ticket which has a *detachable* portion which will

admit only the Overseas Fellow to whom it is issued to the Private View on May 21.

An Associate receives 1 non-transferable ticket. This ticket has a *detachable* portion which will admit only the Associate to whom it is issued to the Private View on May 21.

Each Fellow's ticket (including an Overseas Fellow's ticket) whether non-transferable or transferable, will admit one person at any time when the Show is open on Wednesday, Thursday, and Friday, May 22, 23 and 24, but a non-transferable ticket may, of course, be used only by the Fellow to whom it is issued. An Associate's ticket may be used only by the Associate to whom it is issued.

Transferable tickets may not be left at the turnstiles for collection by persons visiting the Show later, but may be posted at the Post Office in Main Avenue.

Affiliated Societies – The annual tickets issued to affiliated societies do not admit to Chelsea Show. Six special tickets will be sent to the secretary of each affiliated society, early in May. Two of these will be valid on either May 22, May 23 or May 24, and four will be valid on either May 23 or May 24.

Catering – It is regretted that it is not possible to provide set luncheons and teas, but buffets for the service of light refreshments will be available. There will also be separate enclosures for the service of alcoholic beverages.

Post Office& Telephones – A Post Office for the transaction of ordinary Post Office business will be found in Main Avenue, as will also several Public Telephone Boxes.

Railway Inquiries – British Railways have an inquiry bureau in the Show, situated at the junction of Main Avenue and Main-way.

Band – The Band of H.M. Grenadier Guards will, by courtesy of the Officer Commanding, play each afternoon in the Ranelagh Gardens, where chairs are provided.

Cloakroom – A cloakroom at which bags, parcels, etc., may be deposited will be situated in Main Avenue.

Catalogue – An official Catalogue and Guide to the Show will be on sale in the Grounds, price 1*s.* 6*d.*

Bath Chairs – The arrangements for the admission of Bath chairs will be as follows:

On Tuesday, May 21, Fellows and Associates in Bath chairs will be admitted between 8.30 A.M. and 8 P.M. on presentation of tickets for the Private View. There will be a charge of 5*s.* for each chair, and that charge will cover one attendant.

On Wednesday, May 22, Bath chairs will be admitted only between 8.30 A.M. and 12 NOON on presentation of Fellows' or Associates' tickets, or on payment of 15*s.* for the occupant of the chair. There will also be a charge of 5*s.* for the chair and that charge will cover one attendant.

On Thursday, May 23, Bath chairs will be admitted only between 8.30 A.M. and 12 NOON on presentation of Fellows' or Associates' tickets, or on payment of 7*s.* 6*d.* for the occupant of the chair. There will also be a charge of 5*s.* for the chair, and that charge will cover one attendant.

On Friday, May 24, Bath chairs will be admitted only between 8.30 A.M. and 12 NOON on presentation of Fellows' or Associates' tickets, or on payment of 5*s.* for the occupant of the chair. There will also be a charge of 5*s.* for the chair, and that charge will cover one attendant.

The Society cannot arrange for the provision of Bath chairs, but they may be hired from Messrs. Reselco Invalid Carriages Ltd., 262 King Street, London, W.6. Chair attendants cannot be supplied.

TRANSPORT

Visitors travelling by car, taxi or coach should alight at the Embankment entrance. Visitors travelling to London will find the following Railway and Bus Services of London Transport operating from the Main Line Termini:

CANNON STREET (*Railway*). District Line direct to Sloane Square. (*Bus*) Number 13 to Charing Cross, thence by Number 11 to Lower Sloane Street, Pimlico Road.

CHARING CROSS (*Railway*). District Line to Sloane Square. (*Bus*) Number 11 to Lower Sloane Street, Pimlico Road.

EUSTON (*Railway*). Northern Line to Charing Cross, thence by District Line to Sloane Square. (*Buses*) Numbers 68 and 188 to Strand (Aldwych), thence by Number 11 to Lower Sloane Street, Pimlico Road.

FENCHURCH STREET (*Railway*). Tower Hill direct to Sloane Square. (*Bus*) Number 10 to Victoria Street, thence by Numbers 11, 39 or 46 to Lower Sloane Street, Pimlico Road.

KING'S CROSS AND ST. PANCRAS (*Railway*). Piccadilly Line from King's Cross and St. Pancras to Leicester Square, thence by Northern Line to Charing Cross, thence by District Line to Sloane Square. Or Circle Line direct to Sloane Square. (*Buses*) Numbers 77 and 77A to Whitehall, thence Numbers 11 or 39 to Lower Sloane Street, Pimlico Road.

LIVERPOOL STREET (*Railway*). By Circle Line direct to Sloane Square. (*Bus*) Number 11 to Lower Sloane Street, Pimlico Road.

LONDON BRIDGE (*Railway*). Northern Line to Bank, thence by District Line from Monument to Sloane Square. (*Bus*) Number 10 to Victoria, thence by Numbers 11, 39 and 46 to Lower Sloane Street, Pimlico Road.

MARYLEBONE (*Railway*). Bakerloo Line to Paddington, thence by Circle Line to Sloane Square. (*Buses*) Numbers 2, 30 and 74 from Baker Street to Marble Arch, Park Lane, thence by Number 137 to Chelsea Bridge Road, Royal Hospital Road.

PADDINGTON (*Railway*). Circle Line direct to Sloane Square. (*Buses*) Numbers 36 and 36A to Marble Arch, Park Lane, thence by Number 137 to Chelsea Bridge Road, Royal Hospital Road.

VICTORIA (*Railway*). District Line direct to Sloane Square. (*Buses*) Numbers 11, 39 and 46 to Lower Sloane Street, Pimlico Road.

WATERLOO (*Railway*). Northern or Bakerloo Line to Charing Cross, thence by District Line to Sloane Square. (*Bus*) Number 46 to Lower Sloane Street, Pimlico Road.

BAKER STREET (*Railway*). Circle Line direct to Sloane Square. (*Buses*) Numbers 2, 30 and 74 to Marble Arch, Park Lane, thence by Number 137 to Chelsea Bridge Road, Royal Hospital Road.

A plan giving approach routes to the Show and parking places may be obtained on application to the Secretary.

NOTES FROM WISLEY

J. B. Paton

LAST May the beds on the terrace were planted out with a collection of tulips and this new feature created considerable interest. Again this year there will be a further batch of tulips, some new varieties and some repeated again from last year, although all the bulbs are new to Wisley. Before discussing the varieties to be seen it may be helpful to outline the classification of tulips. There are at present sixteen divisions into which tulips may be divided, the first five are grouped together as early-flowering and the remainder as May-flowering. However, a large number of the divisions are results of inter-divisional crosses and so the dividing line between one division and the next is often rather indeterminate. Also with the development of new types the classification needs modification and at the present time discussions are in progress between British and Dutch growers about possible revision of the classification.

The bulk of the varieties planted on the terrace fall into two divisions either being Darwin or Cottage tulips. A Darwin tulip is defined as having the lower portion of the flower usually rectangular in outline with segments of good substance and tall strong stems. The Cottage tulip includes lily-flowered varieties and all others which do not fall into the remaining divisions. Of these the most important are Dutch Breeders, with oval or cupped flowers, English Breeders, with ball-shaped flowers, and four divisions for the broken or striped tulips of the divisions so far mentioned. Then there are the Parrot tulips which have laciniate segments, the late double ones and the species and first cross between species. Of the early-flowering varieties the earliest are the very dwarf Duc van Tol tulips and these are followed by the single Early and Double Early which are succeeded by the Mendel and Triumph tulips. The former are the result of cross pollination between Duc van Tol varieties and Darwins, while the latter are the children of Single Early and Darwin. A group of more recent introduction is the Darwin Hybrids which are the result of crossing Darwins with *Tulipa fosteriana*.

The first bed to be seen on the left as one goes up from the main entrance contains 'Queen of the Bartigons', which is a pure soft pink with a white blotch at the base of the segments. It is a very free-flowering variety which arose as a sport from 'Bartigon'. The other pink Darwin included is 'Tubergen's Glory' a newer introduction with blue-based, cochineal pink segments making a well-balanced flower which is carried on a stiff erect stem. There are two pink Cottage tulips of which the first to flower is 'Rosy Wings'. This variety has a very long radiant pink flower with a pure white base and is reported to be a valuable one for cutting. For arranging tulips in water one often sees the use of pennies advocated to help the stems remain stiff and it was noted recently in a catalogue that a one per cent solution of calcium nitrate has

the same effect. The stems should be stood in this solution for twelve hours after cutting and then the flowers can be placed in ordinary water. 'Smiling Queen' is a pure deep pink Cottage tulip which flowers a little later than 'Rosy Wings' and does not have quite such long flower segments. Two lily-flowered varieties are 'Mariette' and 'China Pink'. The first has warm deep pink flowers of perfect form and substance while the other has satiny pink petals recurved at tips with pure white base.

No bedding scheme of tulips would be complete without some yellow-flowered ones and the old variety 'Niphetos' is included. It has an exterior of soft sulphur yellow and an interior of primrose yellow. A deeper yellow is to be found in 'Golden Age' in which the edges of the flowers turn orange with age while 'Sunkist' is a bright golden yellow and is claimed to be one of the best yellow Darwins, with great substance to the petals. 'Sweet Harmony' is another two-tone yellow tulip which can be compared to 'Niphetos', it being somewhat darker yellow.

In the red shades the Cottage tulips 'Marshal Haig' and 'G. W. Leak' hold the field. The former has brilliant scarlet red, yellow-centred flowers, while the latter is deep geranium lake also with a yellow centre. Both have long pointed petals of good substance. Of the violet hues we find that 'Aristocrat' has the violet heavily flushed with rose and a copper-yellow stripe to the inside of the segments. 'The Giant' has the violet coloration suffused with purple and the base has markings of blue and white. 'Queen of the Night' is the darkest tulip in the collection with purplish-black flowers and bluish foliage. In complete contrast is 'Zwanenburg', which has large pure white, black-anthered flowers.

It is not possible to mention by name, at this stage, any of the varieties in the trial of tulips which is to be found on the Floral Trial Grounds. However, there are to be seen in the trial some sixty newer Darwin tulips introduced since 1945 and also some of the hybrids with *T. fosteriana*. Planted with these are twelve older varieties for purposes of comparison.

A brief mention was made in last month's notes on the control measures used to limit the damage which can be caused by tulip fire. In addition to the methods outlined it should be noted that probably the most important is the removal of the primary infectors. These are the plants which on emerging above ground are seen to be infected with tulip fire.

PLANTS OF INTEREST AT WISLEY DURING MAY

LABORATORY WALLS

Akebia lobata
Clematis montana var. *rubens*
" " " *wilsonii*
Rosa odorata gigantea 'Belle Portugaise'
Tree paeonies

WILD GARDEN

Calanthe tricarinata
Cornus florida var. *rubra*
Enkianthus species
Fothergilla monticola
Hosta species
Magnolias in variety

WILD GARDEN—(*contd.*)
Meconopsis species
Paeonia lutea var. *ludlowii*
Primulas in variety
Rhododendrons in variety

SEVEN ACRES
Amelanchier × *spicata*
Choisya ternata
Genista patula
Halesia carolina
Lilacs in variety
Lonicera xylosteum
Maackia chinensis
Magnolia cordata
Prinsepia uniflora
Ribes aureum
Spiraeas in variety

ROCK GARDEN AND ALPINE HOUSE
Aethionema pulchellum
Anemone nemorosa 'Alleni'
Asperula arcadiensis
Cardamine trifolia
Cytisus in variety
Daphne cneorum eximia
Dodecatheon pauciflorum
Dryas octopetala
Erinacea pungens
Geum × *borisii*
» *montanum*
Haberlea ferdinandi-coburgi
Iberis jordani
Iris douglasiana
» *innominata*
Mazus reptans
Mertensia oblongifolia
Oxalis adenophylla
» *enneaphylla* var. *rubra*
Phlox in variety
Primulas in variety
Saxifrages in variety
Sedum pilosum
Tiarella cordifolia

ROCK GARDEN AND ALPINE HOUSE (*contd.*)
Tiarella wherryi
Trollius europaeus
Veronica gentianoides

HOWARD'S FIELD
Lilacs in variety
Roses in variety

GLASSHOUSES
Acacia pulchella
Brunfelsia calycina var. *macrantha*
Clerodendrum splendens
» *thomsonae*
Columnea microphylla
Gesnera cardinalis
Hoya bella
Jasminum parkeri
Mitraria coccinea
Streptocarpus caulescens
Streptosolen jamesonii

WEATHER HILL
Flowering cherries
Flowering crabs
Lilacs in variety
Sorbus rehderiana

BATTLESTON HILL
Davidia involucrata
Flowering cherries
Halesia monticola var. *rosea*
Kurume Azalea Garden
Magnolias in variety
Primulas in variety
Rhododendrons in variety
Trial of Deciduous Azaleas
» » Hardy Hybrid Rhododendrons

FLORAL TRIAL GROUNDS
Trial of Darwin Tulips

LONGWOOD GARDENS: A TWENTIETH-CENTURY AMERICAN PLEASURE GROUND

Lanning Roper

IN the eighteenth and nineteenth centuries great thought was given to the planning of pleasure grounds on private estates, but in the twentieth century fewer gardens were considered along these lines. No gardens more justly earn that name than those at Longwood which were largely devised and carried out by the late PIERRE S. DU PONT (1870–1954). This estate, comprising about a thousand acres, is located at Kennett Square, Pennsylvania, about thirty miles from Philadelphia and twelve from Wilmington, Delaware. The gardens at Longwood are unique, first for the vast indoor conservatory covering about 300,000 square feet, or approximately three acres, and secondly for the impressive formal garden with its series of illuminated electrically controlled fountains which are without equal. In addition there is an outdoor theatre with a seating capacity of two thousand, underground dressing-rooms and a water screen, as well as another water-garden designed on an Italian prototype, a giant cascade, large flower-gardens, naturalistic lakes and an arboretum, all of which will be discussed in some detail later in this article.

The site of Longwood Gardens is a particularly beautiful one, for the country is naturally rolling and there are still large tracts of primeval woodland amidst the farms and estates. Longwood dates back to 1702 when WILLIAM PENN, the founder of the state of Pennsylvania, conveyed the original tract of land to GEORGE PEIRCE, whose son built the old residence in 1730, and it is this structure which still stands today although it has been considerably enlarged by the addition of two other wings joined by a patio to form what was the DU PONTS' country home. The property remained in the hands of the PEIRCE family, save for a very brief interim period until it was purchased by MR. DU PONT in 1906. The PEIRCE family were interested in horticulture, and near the old house a fine garden was developed with interesting plantings of trees and shrubs as well as avenues of maples and beech. Much of this old layout, which was incorporated by MR. DU PONT into the later development, has great charm and character.

In 1931 when the major plan was completed the Longwood Foundation Inc. was established as a non profit-making institution. The family continued to use Longwood as a weekend home although the gardens with all their attractions were open daily, as in the past, to the public. Under the terms of MR. DU PONT'S will Longwood Gardens was left as a "Horticultural display for the benefit and enjoyment of the public", and, of course, for scientific and educational purposes as well. It was,

however, always his intention that this great scheme should be envisioned not as a botanic garden nor as a collection of rare plants but as a pleasure garden to be enjoyed by the vast and ever-growing, garden-loving public in America. Last year over 335,000 persons visited Longwood, and with the rapidly expanding educational programme these figures should show an increase each year.

Today when the preservation of gardens is such a pressing problem on both sides of the Atlantic as a result of taxes and the cost and scarcity of labour, the establishment of the Longwood Foundation is particularly interesting, for it has not been left as a static creation merely for preservation but as a living growing Foundation, heavily endowed by a capital amounting to over fifteen million pounds. There are very few limitations in the charter so that the garden can grow and expand and even be altered as is seen fit by the six trustees, all members of the DU PONT family, and the permanent staff who administer the garden. Funds for plant collectors will be made available and in recent months DR. JOHN L. CREECH, horticulturist of the United States Department of Agriculture, has been in Japan seeking new plants of outstanding horticultural merit on a grant from this source. Scientific work and plant hybridizing will also play an important role in the future. Demonstration areas for various purposes are envisioned and at Longwood many functions performed at Wisley will be approximated. The staff of about 180 headed by the director, DR. RUSSELL J. SEIBERT, includes superintendents of horticulture, maintenance, and education, a taxonomist and a business manager. Longwood Gardens is a small town in itself including experts in all the building trades—electricians, plumbers, joiners, masons, refrigeration experts, mechanics, draughtsmen, painters, truckmen, a fire department, etc. About a hundred houses are available and due to their charm and modern comfort labour problems are secondary as far as staff is concerned. So much for the structure of the present foundation.

Of particular interest to me has always been the conservatory (Fig. 63). As stated above this covers about three acres and has a frontage of 650 feet. It is classically Georgian in design and much of the structure is built of bronze. It faces south and along the front is a long raised terrace which is a vantage point from which to view the vast fountain garden below, which is as large as a city square. It is impossible to think of the construction of the conservatory without the formal layout with its illuminated fountains to the south of it, as it was one construction job and much of the cutting and filling for the latter made possible the site of the former. The conservatory and fountains, which took two years to build and install, were completed in 1931.

The plan of the conservatory consists of a great rectangular central orangery with two large areas of lawns outlined by flower borders. A central path leads to another long rectangular area on a slightly lower level which can be used as a theatre or auditorium but for the most part it houses the collection of Australian tree ferns (*Alsophila australis*)

which are borne on tall thin trunks. Below are massed young Mexican tree ferns (*Cibotium schiedei*) with graceful arching pale green foliage. With these are grouped seasonal flowers such as some of the hippeastrum collection, considered by the National Amaryllis Society to be the finest in America, or later cymbidiums which are particularly beautiful in the tree fern setting, as the 5- and 6-foot sprays of flowers in shades of lemon, chartreuse green, pink and brown, are so graceful against the foil of delicate green and strike just the right exotic note (Fig. 61). The original rectangular area into which one enters is particularly effective because of the superb lawns which act as a setting for the beds of brilliant flowers. Here and there a tree fern or an orange tree or a giant acacia breaks the formality of the area. The pillars which support the glass roof some 25 feet above are covered with climbers, and that charming clinging creeper *Ficus pumila* has covered almost every inch with a close network of glistening green. Bougainvillea adds a brilliant note of colour at certain seasons as do climbing roses, clerodendrums, jasmine, *Plumbago capensis*, and many other climbers. These two central courts are kept quite cool in winter, usually at an average temperature of 45 to 50 degrees (Fig. 59).

The borders provide a brilliant display throughout the year. In the many ranges of auxiliary greenhouses tens of thousands of bulbs and plants are forced to maintain a perpetual flower show in the exhibition halls the twelve months through. It is a little like a perennial Chelsea save for the fact that there is far more room for proper display and the areas of beautifully kept lawn with tree ferns and flowering standard shrubs and trees lend dignity, serenity and a feeling of permanence which are usually missing in displays at flower shows.

At Christmas there are thousands of poinsettias (*Euphorbia pulcherrima*), the flamboyant reds and the less familiar ivories and salmon pinks. *Primula obconica* and cyclamen make a wonderful show in the borders as do thousands of Dutch irises, precooled daffodils, Roman hyacinths and the highly decorative *Pycnostachys dawei* with its cobalt blue flowers. At Easter there is an unbelievable wealth of showy Easter lilies (*Lilium longiflorum*), banks of tulips, cinerarias in rich shades of blue and violet, fragrant yellow genista, ranunculuses with their fat, fully double, poppy-like flowers in brilliant hues, and a bewildering array of stocks, snapdragons, polyanthuses and schizanthuses. For height, standard wisterias, jasmines, rose trees and lilacs break the flatness of the borders. This use of standards and large shrubs, which are cared for in a special house devoted to standards in tubs, makes possible endless effects which are particularly striking.

In April and May wonderful arrangements are achieved with massed Canterbury bells, delphiniums, marguerites, schizanthuses, arum and longiflorum lilies, calceolarias, astilbes and azaleas, to name only a few of the outstanding ones. In summer when there is no way to control the heat of the conservatory, save by shading and ventilation, the list of plants is more limited. Achimenes hybrids, gloxinias, fibrous and

tuberous begonias, *Campanula pyramidalis*, fuchsias, pelargoniums, *Lilium auratum* and *L. speciosum* and China asters are used for bedding, and fuchsias, crape myrtles (*Lagerstroemia indica*), lantanas, heliotropes and oleanders are used as standards.

Autumn brings chrysanthemums in every possible form. Cascades are a feature and there are wonderful trained forms as well as pompons, buttons, singles, exhibition doubles, both incurved and outcurved, and loveliest of all the exotic Japanese forms with long curving pendulous petals, in a rainbow of colours (Fig. 66).

Every morning there is a changing and a manicuring, as plants which are past their prime are replaced with fresh ones and whole areas are altered both in conception and in colour. Everything is so expertly grown and artistically arranged that one forgets that bulbs have been grown in flats and pots rather than grown *in situ*. Great thought has been given to fragrant plants and there is a curious scent which I associate with Longwood Gardens from my boyhood. It is the subtle scent of *Acacia leprosa*, which is fragrant in leaf as well as in flower. It always permeates the vast area winter and summer. The fragrant olive (*Osmanthus fragrans*) is a close second but only when in flower. Citrus fruit trees—oranges, lemons and grapefruit—are a constant feature and there is always a succession of plants with heavy scents like tuberoses, freesias, narcissi, wisterias, eucharis lilies, acidantheras, stephanotis, gardenias, bouvardias, stocks, mignonettes, hedychiums and even *Michelia fuscata* with its strong banana scent.

To the east of the orangery court and the indoor theatre there is a vast covered area which houses an impressive collection of rhododendrons and camellias (Fig. 65). This includes hundreds of plants of both botanical species and varieties. To the west of the orangery court is a long corridor off which opens a series of ranges of greenhouses, each devoted to a special genus or function. This corridor is in some subjects comparable to the famous ones at the John Innes Horticultural Institution, and although there is an enormous number of plants of a highly decorative nature, there is perhaps a little monotony, if one may be allowed to criticize constructively. For example, there is a fabulous collection of *Hibiscus rosa-sinensis* with huge flowers, frilled and fringed, in shades of yellow, apricot, salmon, claret, orange and subtle blends. There are hundreds of ferns and a whole passage of acacias in a few species (Fig. 60). All these make a wonderful display when at the height of their flowering but perhaps it would be well to include a wider variety to make for more varied interest and for a more continuous succession of bloom. Undoubtedly this will happen in the course of time as the collection is added to.

Opening off the acacia passage is a square house devoted to anthuriums in profusion, on one side with their flat, waxy crimson and salmon spathes and on the other side to two glass display cases flanking a central door. These always house the choicest plants currently in bloom from the orchid houses. Here enormous cattleyas, miltonias,

dendrobiums, phalaenopsis and vandas are superbly staged with breath-taking results. The orchid collection is probably the finest in America, for a few years ago the MRS. WILLIAM K. DU PONT collection, reputedly one of the best in the U.S., was added to the existing collection, already an important one. If there is a weakness in the Longwood collection it is the lack of botanical species and steps already have been taken to remedy this.

Through the door between the cases one enters a small tropical house of lofty proportions where some of the most interesting economic and decorative plants in the collection are housed. There are five or six trees of bananas (*Musa paradisiaca* and the dwarfer *M. nana*), one of which almost always obliges with a bunch of ripening fruit; the towering stems of papaya with their curiously flat-sided, tapering, green fruits hanging heavily in a ring close beneath the tuft of leaves, and passion flowers clambering up the stems of other plants and hanging in garlands across the glass roof. Tea and coffee plants and the lovely *Clerodendrum thomsoniae* are also featured.

Continuing down the central corridor to the west from the orchid display, there is a long rose house to the left which provides an excellent demonstration of how to grow fine long-stemmed roses under glass. On the back wall a vigorous plant of *Allamanda cathartica* with huge golden chalices from April to September and *Bougainvillea spectabilis* in January and February make a fine show.

Other houses are devoted entirely or in part to carnations, African violets, hippeastrums, chrysanthemums, cymbidiums, other orchids, stocks, sweet peas, and to various phases of general production and propagation. In all there are about twenty-five separate units, devoted either to display or production.

In former years a great deal of space was devoted to the growing of fruits for the DU PONT family. Separate houses were given over to the production of peaches, apricots, nectarines, grapes, figs, melons, etc. In February and March when the first three are in bloom the houses are a wonderful sight with the neatly espaliered trees producing curtains of delicately coloured flowers. It has now been decided to cut down on the amount of space devoted to fruit, but demonstrations of each type will be carefully maintained as there are few places left in the United States where hot-house fruit is grown with such attention to detail and where such a high degree of perfection is attained. Nothing requires quite so much labour as there must be vigilant pruning, tieing in, spraying, syringeing, thinning, hand pollination, etc.

The conservatories, like the rest of the garden, are open free every day of the year from eleven until five and on Sunday afternoons there are organ recitals on the great organ in the long ballroom behind the main display conservatory and the auditorium. The organ is remarkable as it has over 10,000 pipes and occupies a space of 63 feet long, 40 feet high and 30 feet deep. It is one of the most notable instruments ever made.

The fountain display which lies across the south front of the conservatory is enormous in its conception. It is rectangular in shape and gives the feeling of a sunken garden as it is bounded on three sides by high retaining walls although open to the west. Actually it was constructed by cutting away the hill to the south and the east and building up the slope to the north on which the conservatory stands. The rectangle is enclosed on three sides facing the conservatory terrace by an avenue of clipped Norway maples. In the garden itself there are two canals running east and west with a series of illuminated fountains. The upper canal nearest the conservatory is connected to the lower by a central water staircase which divides to form an oval in the centre, which features a box bush over 35 feet in diameter. The canals are bordered with large plantings of box and one is little conscious of the water courses until the fountains are turned up. The retaining wall at the south, opposite the conservatory terrace, has as its central theme a pavilion with three classical rounded arches. On either side there are a series of curved niches outlined with ivy. Huge sculptured vases on pedestals alternate with masks, from which water gushes into a series of shell basins beneath and finally overflows into the canal. At the north end there is a classical portico with an imposing central wall fountain flanked by figures which empties into the canal. Most of the stonework and sculptured decoration was imported from Italy (Figs. 62, 63).

The fountains are a remarkable engineering feat, made possible by an elaborate system of pumps which circulate the water endlessly. The fountains are electrically controlled as is the elaborate underwater lighting system. It took two years to install and there is no other electrically operated illuminated system of fountains anywhere in the world to equal it. When the fountains are all turned on it takes about 18,000 gallons of water a minute to supply them, and the whole system requires a total of 650,000 gallons when the reservoirs are filled.

Along the top of the wall is a rectangular basin 100 feet wide and 224 feet long in which are arranged six more fountain displays. One jet shoots water 115–130 feet into the air and there are others which can be regulated at varying heights and patterns. These form the background motif of this water piece. The complexity of the set-up is too involved to be explained here, but suffice it to say that the coloured displays given at dusk or at night are unrivalled in their magnificence. Although recalling Versailles, they are far more concentrated in their arrangement and design.

At the west end of this upper basin and hollowed out of the hill is the pump house to which all the water returns from the fountain system via the canals. Here there is an elaborate system of pumps, filters, transformers, compressors and switches which make possible the dazzling spectacle of water and coloured lights. When the fountains are not in use, the water can by-pass the pump house to a storage reservoir. It is interesting to note that the planning, designing and the actual

construction of the whole scheme was carried out under MR. DU PONT'S personal supervision by the Longwood Estate Construction Division and Maintenance Department and not by outside contractors.

To the south-west of the pump house is a rock-rimmed storage reservoir. This supply can be used either for the fountains or it can be pumped to another reservoir on top of the hill from whence it flows back in a continuous circuit over a cliff and cascade some 40 feet high. This cascade is illuminated by night and makes a wonderful feature in its setting of trees and flowering shrubs, which includes great masses of pink dogwood (*Cornus florida rubra*) and *Magnolia grandiflora*. On the slope near the cascade there is a monumental stone tower with electronic singing chimes.

Behind this slope is an arboretum planted with interesting conifers of various genera with magnolias, flowering cherries, paulownias, crab apples and fruiting trees like sorbuses and pyracanthas. A persimmon tree (*Diospyros virginiana*) was covered with orange fruits in late October and these were delicious as they had been sufficiently touched with frost to be mellow and ripe.

To the east of the fountain area above the retaining wall is a formal rose garden and an all-green yew garden, at the north end of which there is a 40-foot analemmatic sundial, the biggest of its kind ever evolved. An upright staff casts a shadow on the rim of the great circle, on which both the hours and minutes are marked. This method was used by the Egyptians. It is accurate not only to the hours but to the minutes as well, although a slight manual adjustment of the staff is necessary each day.

Further to the east a long avenue of venerable maples and copper beeches underplanted with *Pachysandra terminalis*, one of the finest of all evergreen carpeters, leads to the old residence, used now to house the important library amassed by MR. DU PONT. To the south and east is a formal garden with massive flower borders, decorative boxwood, fountains and rose gardens, in a setting of fine old trees, many of them planted in the eighteenth century. Among the outstanding specimens are a giant ginkgo, believed to be one of the original importations to the United States and now with a trunk over $3\frac{1}{2}$ feet in diameter, and a magnificent *Magnolia acuminata* nearly 4 feet through and of enormous height. Other trees of unusual size include the Canadian hemlock (*Tsuga canadensis*), *Liriodendron tulipifera*, *Paulownia tomentosa*, copper beeches and scarlet oaks. Still further to the east is a fine grove of old sugar maples which colour particularly well in the autumn. Unfortunately, many of the big trees suffered in one of the hurricanes several years ago as have so many fine trees in the north-eastern and central part of the Atlantic coast. Magnolias are a feature and there are very old specimens of *Magnolia soulangiana*, *M. denudata* and *M. stellata*.

The outdoor theatre is simple in design but very effective, for there is a delightful backdrop of trees and the wings of the stage are clipped hedges of arbor-vitae (*Thuja*), while the amphitheatre is a gently sloping

green lawn. There are no dressing-rooms or houses for scenery storage to mar the landscape as all these facilities are beneath the stage. The water curtain is a novel idea, managed by a row of fountain jets 6 inches apart which are lighted from behind, making possible an opaque screen of shimmering water to a height of six feet. Other fountains are located behind the stage and on the stage itself so that the possibilities for effectively illuminated tableaux are endless. In this theatre evening performances of Gilbert and Sullivan, musical comedies, choral recitals and band concerts are given throughout the summer months and these are followed by displays of the fountains on the Conservatory front described above. The theatre was first constructed in 1913 but was completely changed and renovated in 1926–27.

An avenue of swamp cypress (*Taxodium distichum*) at the south side of the formal garden and theatre area leads between two small artificial lakes, the one to the left being considerably the larger. These are beautifully placed against a background of fine trees and sloping wooded hillside with wide sweeping lawns planted with specimen trees. At the further end of the smaller lake there are massive plantings of azaleas backed by broad-leaved rhododendrons. Cypress trees with their curious "knees" growing up out of the water are a feature. Around the larger lake there are broad plantings of daffodils which make a colourful sight in the spring and on the wooded hillside there are vast colonies of snowflakes, primulas, hostas, irises and bulbs.

A group of weeping willows make a fine composition at the far end of the lake and a terrace with wrought-iron railings has been constructed across the head of it. This overlooks a formal water garden below. On a trip to Europe in 1925 MR. DU PONT visited the Villa Gamberaia outside of Florence and one can see the resemblance in the layout of the four rectangular pools around a central fountain with a large oval fountain basin at the end. The four rectangular pools with fountains all seem to be the same size but actually the two further ones are 20 feet longer to create the optical illusion (Fig. 64). Along the sides of this garden there are ivy-covered terraces backed by clipped hornbeams and a combination of hemlocks and huge box bushes close the vista. Along the side terraces a series of six circular fountain basins overflow into semicircular basins below, so there is a constant flow of water lending both movement and sound. In one corner a cascade of water flows down over the rocks and a water staircase leads from the lake above. The pools are lined with blue tiles and there is rich ornamentation in the Italian manner at the corners of the pools. Ivy has been trained over the copings of the pools and it is kept neatly trimmed so that the garden is an all green one save for the shimmering blue of the pools and the flashing jets of the fountains in the sunlight.

The outdoor collections of trees and shrubs are interesting, and certainly the native stands of forest are in themselves worthy of comment. Giant tulip trees, beeches, oaks and maples reach enormous heights. Alas! the chestnuts have all been killed by blight and it is only

by constant spraying that the elms are protected from the dreaded dutch elm disease. The plantings of lilacs, flowering cherries, philadelphus, rhododendrons and viburnums are large in size with now well established old specimens. At the moment a special effort is being made to label the plant collection and a highly trained taxonomist is devoting the better part of his time to this task.

The future of Longwood Gardens is a bright one. Not only has it become a place of national pilgrimage like Williamsburg and the famous Charleston gardens but it is also becoming a centre for interested amateur horticulturists who require both assistance and inspiration. Recently an experimental house has been constructed where latest methods of propagation are tried out and difficult plants can be propagated and new collections isolated. The Foundation is in its infancy, but important developments lie ahead. Visitors in spring should also make a point of seeing the wonderful woodland gardens at Winterthur, a few miles away on the road to Wilmington. This great naturalistic garden with fine azaleas and flowering shrubs is one of the finest examples of informal landscape gardening in America. It is the creation of the late MR. PIERRE S. DU PONT'S first cousin, HENRY F. DU PONT, and is again a part of a Foundation, in this case in conjunction with the Winterthur Museum, the finest collection of American decorative arts of the period 1640–1840 in existence.

LABOUR SAVING IN THE GARDEN

Margery Fish, Brig. C. E. Lucas Phillips, O.B.E., Michael Haworth-Booth

(*Part of a Symposium held at the Horticultural Club on Tuesday, October* 16, 1956, MR. P. M. SYNGE *in the Chair*)

PART II

THE CHAIRMAN: A year ago the Horticultural Club held a symposium dealing with the mechanization side of labour saving in the garden. This was published in the R.H.S. JOURNAL for August, 1956. This evening we hope to discuss other aspects of labour saving, dealing with garden planning and the choice of plants. The ideas put forward are the personal ones of the speakers. They are all owners of smaller gardens which they have designed with special care in order to save labour but still to retain the maximum of the kinds of plants in which they are interested. MRS. FISH lives in Somerset and the other two speakers in Surrey.

MRS. MARGERY FISH: Every gardener, I think, should aim at a garden that is attractive every month in the year. None of us has nearly as much labour as we should like so we have to plan our gardens so that we can achieve this with such little help as we can get.

Save labour we must, but I think we should do it in such ways that we do not spoil the look of the garden. I know people, for instance, who will not have a lawn because they do not want to mow the grass. I do not agree with this because there is no better setting for flowers and shrubs than a well-kept lawn. But it should be in as large and as unbroken a stretch as possible, with no narrow grass paths between flower beds or little strips along the drive, and no dinky little beds cut in the lawn. Grass is not difficult to keep in order if it is in one big piece and is cut regularly.

We all like to plant bulbs in the grass but if they are scattered in odd places all over the lawn they become as much trouble as little beds. But if the planting is concentrated in one place or around trees it does not add to the work. Part of my lawn is reclaimed orchard and I have bulbs round all the old apple trees. It merely means that we make a bigger sweep when we come to cut the grass and can leave the rough grass round the bulbs until the foliage has died down. I grow a lot of things in the grass in addition to the usual daffodils and crocuses and snowdrops. Dog-tooth violets do well grown this way, and so do fritillaries, grape hyacinths and *Anemone blanda* and *A. apennina*.

When we made our lawn we put a low wall to separate it from the drive, which was then gravelled, and to prevent earth falling on the gravel. To allow the mower to be taken over the edge of the grass we made a narrow gulley, about 6 inches wide. Along one side of the lawn is a border and here, as well as the gulley, I have flat mowing stones. In the front of a border there are always plants that spill over, such as nepeta, pinks and santolinas, and without the stones it would be necessary to put in stakes with a line between to keep them out of the way of the mower. In addition to allowing a pleasant informal planting in front of the border it gives me a chance to put a few rock plants between the stones.

My lawn is higher than the drive and a permanent ramp of stone makes it easier to take the mower and wheelbarrow up and down. Although the garden is on different levels I have arranged the paths so that I can get the mower and barrow to any part of it without taking them up steps.

Badly kept paths ruin the appearance of any garden. For years I struggled to keep gravel paths in good order but in the end I gave up. I think they are the most difficult of all paths to maintain because no one now can roll them enough. Only rolling will produce the hard surface that is necessary to prevent weeds, particularly at the sides of the path. I do not think people will have gravel paths in future. There is not the labour to keep them in good condition.

I solved my problem by putting a bituminous mixture on my drive. It is not too expensive an operation if the work is done by oneself. I borrowed from the local builder a man, a heavy roller and an implement to spread the mixture and the result is quite satisfactory. Occasionally there are a few surface weeds, but not many. It always looks nice

and I made a point of getting chippings to match the colour of the house, which is built of Ham stone.

The rest of my paths are paved, so they are practically labour-saving. Theoretically the stones are laid in cement but Somerset labour combined with Somerset cement is not very permanent. I do get a few weeds but I also get a lot of nice little plants, and it does not take long to keep the weeds under control.

In most gardens there is a hedge of some sort and most of them need trimming unless the garden lends itself to a natural hedge of roses or flowering shrubs. I was given small plants of *Lonicera nitida* to make my first hedge and all the hedges in the garden were made from cuttings from those few plants. Lonicera is useful if you want to grow a hedge in a hurry but it needs cutting four times a year and if I bought material for a new small hedge I should choose box or yew which needs cutting only once a year. A year or two ago I found my hedges were getting very wide at the top and too tall for their foundations. By cutting them down considerably and making the width of the top no more than a foot we have reduced the surface that needs cutting to about a quarter. There is another point about a hedge, and that is the danger of planting anything that matters too near it. I speak feelingly, having suffered from destruction by hob-nailed boots. It is much easier to cut the hedge if there is a good space between it and the plants growing near it.

There are two points I would like to make about flower-beds. One is that it is easier to deal with them if they are level with the grass or path, and not raised, and the other is not to have them too wide. A very wide border is one of the most difficult places in which to work, as there is no room to turn round and no place for tools or a basket. If there has to be a wide bed in the garden I suggest that there should be paving stones to stand on or a little path running along the middle. This will not show from a distance and does enable the gardener to get into the bed and work without breaking everything in it. Most of my beds are narrow and I can do all the work on them from one side or the other without standing on them, which is a great advantage, particularly after rain.

One of the most labour-saving things I have is a small paved garden in front of the house. I can get to it only through the house or round the road so it has to be easy to maintain, and it is, although the stones are not all laid in cement. Thymes and dwarf irises, erodiums, dianthus and tiny daisies, with all manner of creeping things fill the crevices and oust the weeds. The beds round need very little attention because in the spring there are hellebores, primroses and white daffodils, planted between hydrangeas, which are still in bloom. It is as labour saving and attractive as any small garden can be, and far easier to take care of than if I had grass instead of paving.

When it comes to planting I think the secret of labour saving is to have your ground covered. When I say plant as closely as possible I do not mean that roses, or penstemons, are planted so close that they have

not room to develop—the way every man says his wife plants! I have my plants properly spaced but I bring the other plants up to them so that there is practically no bare earth showing. I find that the parts of the garden that give me the least trouble are those that are thickly planted. It is the wide open spaces that make the work. Not only do they grow weeds but they get dry in the summer and need hoeing. We all know that when we have pulled up a luxuriant crop of weeds from among the vegetables the ground underneath is pleasantly moist. If we adopt the same principle in planting flower-beds we conserve moisture and save work.

Plants suitable for ground cover should be those easily controlled, with no invasive habits and not too greedy for nourishment. I particularly like the type that keeps its foliage close to the ground, so *Tellima grandiflora* is one of my favourites for this purpose. It is good near autumn-flowering subjects because its flowers come in the spring, and after they are cut down there is a carpet of attractive foliage, turning red in the autumn. Heucheras are good, too, the bronze-leaved *H. rubescens* and the little pink *Heucherella tiarelloides*, and for a shady border the tiarellas. Prunellas, *Stachys macrantha*, iberis and geums are all useful for covering the soil, and so is *Stachys lanata*, *Ajuga variegata* and *A. pyramidalis*, and *Aster yunnanensis* 'Napsbury', which makes itself into a close mat. Bergenias have all the qualities we need, and where there is not room for the large-leaved varieties I use a small one with 2-inch leaves.

The permanent plantings I have in the garden to give it a clothed look in the winter also help. Mounds of purple or golden sage, low-growing shrubs like *Viburnum davidii* and *Cotoneaster horizontalis* cover a lot of territory and weeds do not grow under them. Dwarf conifers help with their diversity of shape and colour, and spreading ways, and *Mahonia bealei* can be pruned to keep it low and wide. Rosemary and santolinas, *Euphorbia wulfenii* and rue, and neat little shrubs like *Helichrysum trilineatum* and Veronica 'Morning Glory' all give pleasure without work, and in a difficult bed against a wall *Veronica cupressoides* spreads itself helpfully.

There is not much work in connection with perennials when once they are planted but it is easier to have them in big groups, so that they grow up together and can be cut down together, often with a pair of shears. This means less work than if they are dotted here and there.

It saves work to have in the garden a number of labour-saving plants, plants which will bloom for a long season and do not need any attention, such as nepeta, *Geranium endressii* and *G. sanguineum lancastriense*, and *Achillea taygetea* and *clypeolata*. *Phuopsis* (*Crucianella*) *stylosa*, the cultivated woodruff, combines perpetual flowering with good ground coverage; the dwarf erigeron 'Elsie' does the same thing and so do the herbaceous potentillas, particularly 'Gibson's Scarlet', 'Miss Willmott' and 'Roxana'. I find penstemon one of the most useful plants to grow. They bloom from June until the frosts come and all the

attention they need is to have the dead heads removed. *P. heterophyllus* is particularly useful. I mean the bronze-leaved species (there is a lot of it in the Oxford Botanic Garden), not the smaller bright blue 'True Blue', which does not care much for my limy soil. *P. heterophyllus* is rather low and spreading and three good plants will cover several square yards.

No one would consider a garden without annuals, but growing them in separate beds is not labour saving as it is some time before they cover the ground. The question does not arise with me as I should never have an empty bed to give them. I grow them among my other plants, poked in here and there wherever there is a gap and where I want colour later in the year. At the moment I have a wonderful display of echiums—by generosity of the R.H.S. Low plants go in front and tall ones, such as larkspur and zinnias, among taller perennials, which help to support them.

I do not use many bulbs in the flower beds, except tulips, which I plant deeply and close together in clumps, and leave in. After a few years they need dividing, but that is all. Putting things in in the spring and taking them out in the autumn takes a lot of time so I do not grow gladioli or dahlias, although I have two clumps of the latter which have become permanent fixtures. Mine is a cottage garden and things have to take their chance.

Staking can take up a great deal of time, so I do not grow anything in the garden that needs individual staking, except larkspur. I grow the small chrysanthemums that need little staking, never the big ones that must be disbudded and given a stake to each stalk. If perennials like michaelmas daisies and heleniums grow too tall for convenient staking I cut them to the ground when they are about a foot high, and they grow much shorter, and flower later.

There is one way in which all of us could save labour and that is to be content with gardens of such size and character that we can manage them easily and do all our jobs at the proper time, when they take half as long. But that, I know, is something that no gardener could ever do!

BRIGADIER C. E. LUCAS PHILLIPS: My approach to this subject of labour saving in garden planning and planting is essentially that of the small gardener, for I have never had a garden of my own of more than 1¼ acres. I shall take planning first. Very often problems of this sort are best approached by a process of *reductio ad absurdum*. If a person is simply too lazy (I exclude age and infirmity) to do any serious gardening at all, one's answer to him is: Go and live in a flat. Alternatively, he can employ the kind of garden designer whom I would call a "pavement artist" and get him to devise a nice, expensive expanse of York stone with a solitary "sad cypress" in a far corner.

However, I imagine that there is no one here tonight to whom such advice applies. Given physical health and a real keenness for gardening, the question to ask oneself on this issue is not, I suggest, how to save

labour but how to save time. You should ask yourself not "How can I save labour?" but "How much time can I give, and in that time how much can I get through, with or without hired labour?" The two propositions are by no means the same thing, for they imply two quite different psychological approaches. Thus our first factor in garden planning is one of time.

The next factor is: What is our conception of our garden? What sort of garden do we want to have, and to what uses are we going to put it? My own conception of a garden is that of ANDREW MARVELL'S—one in which "to weave the garlands of repose". To my mind, "repose" is the objective in any garden. Of course, if you are a specialist or a "fan" in any genus, if you want to grow aldermanic dahlias, mayoral chrysanthemums, multi-bloomed sweet peas or superb solitaire roses, then you have to allow the time necessary for all the business of disbudding, spraying, staking and tying, specialized feeding, and all that sort of thing. These are inescapable for producing specimen blooms, but, personally, that is no longer my conception of a garden. My conception has entirely changed.

Having resolved the point of whether we want a specialist or a general garden, we have now to ask ourselves: What are the things in any garden that take up most time? They are these: vegetables, lawns, paths, hedges, apples and pears, the greenhouse, and, all the time, over and above all, the ever-insistent problem of weeding.

Let us look at these very briefly in turn. There is no doubt that the vegetable garden is the thing that occupies most time of all. To my way of thinking, the vegetable garden is the one place that should be always in apple-pie order—every individual plant a good specimen and not a weed to be seen. In a general floral display you can put up with an imperfect rose or a little greenfly, but an imperfect cabbage or a fly-ridden bean is useless. We have to face the fact in vegetable gardening that it occupies us for ten months of the year at least, even if we do not go in for cloche gardening. All the time we have something to sow, to thin, to prick out, to water or to hoe, and we have pests to fight, plus the annual or biennial digging.

I am very interested in vegetable gardening. I like it for its own sake and for the sake of my palate and my purse. However, I must say that, from the point of view of saving labour, I would give it up tomorrow if it were not for the emphatic opinion of one's partner in life!

Almost as hard a driver of Time's chariot as the vegetable garden, and probably quite as hard, is the lawn. MRS. FISH said something about it. For at least seven months of the year, and at least once a week, we have to mow it and trim it. That is thirty times a year at the very minimum. If you prefer grass to plantains you will do a great deal more. You will weed it, feed it, spike it, rake it and mulch it, all of which jobs—I do them myself—are very slow and extremely tedious to boot, especially if you have not expensive equipment.

Again, therefore, the purely logical conclusion is to have no lawn at

Photo, G. Hampfler, Longwood Gardens

LONGWOOD GARDENS

FIG. 59—The Conservatory with *Jasminum primulinum* and tree ferns (See p. 195)

Photo, G. Hampfler, Longwood Gardens

LONGWOOD GARDENS

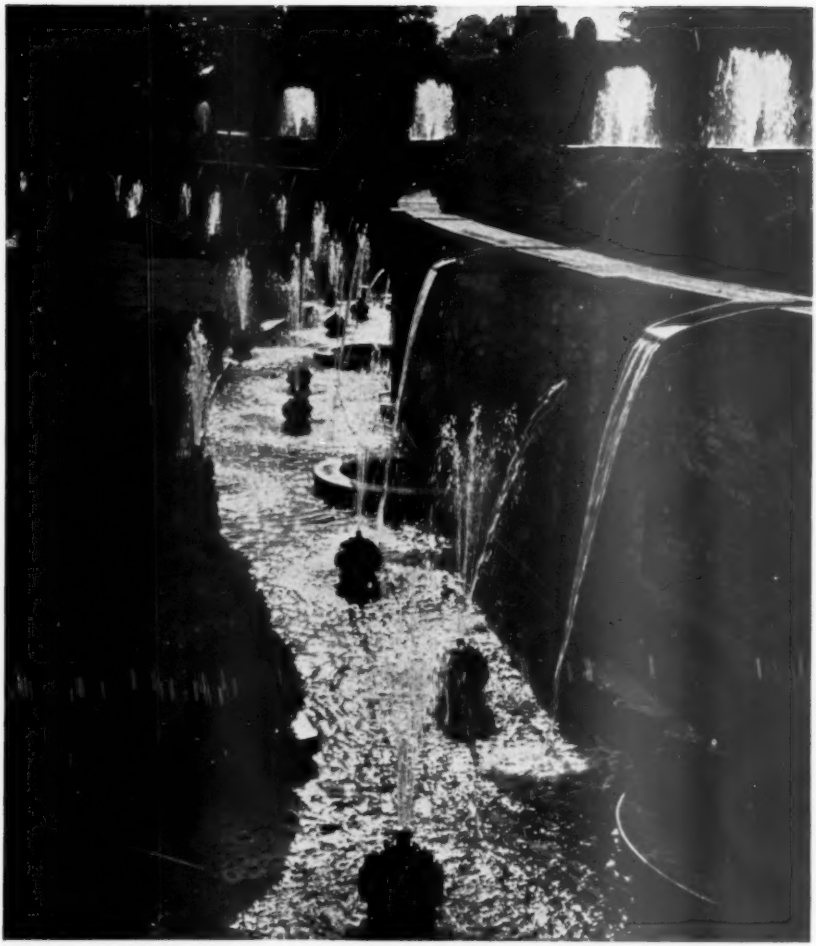
FIG. 60—The acacia collection with under-planting of *Primula malacoides*
(See p. 196)

Photo, G. Hampfler, Longwood Gardens

LONGWOOD GARDENS

FIG. 61—A fine display of cymbidiums from the famous Longwood collection

(See p. 195)



Photo, G. Hampfler, Longwood Gardens

LONGWOOD GARDENS

FIG. 62—A view of the Fountain Garden with back lighting on the water and plantings of boxwood (See p. 198)

LONGWOOD GARDENS

FIG. 63—View of the Conservatory front showing the fountain display in the foreground (See pp. 194 and 198)

Photos, G. Hampfler, Longwood Gardens

FIG. 64—The Italian Water Garden, a replica of the one at Villa Gamberaia near Florence, with clever false perspective (See p. 200)

LONGWOOD GARDENS

FIG. 65—A view of the camellia collection (See p. 196)

Photos, G. Hampfler, Longwood Gardens

FIG. 66—Chrysanthemum display in the Conservatory with Cascade varieties against the pillars (See p. 196)

Photo, J. E. Downward

LABOUR SAVING IN THE GARDEN

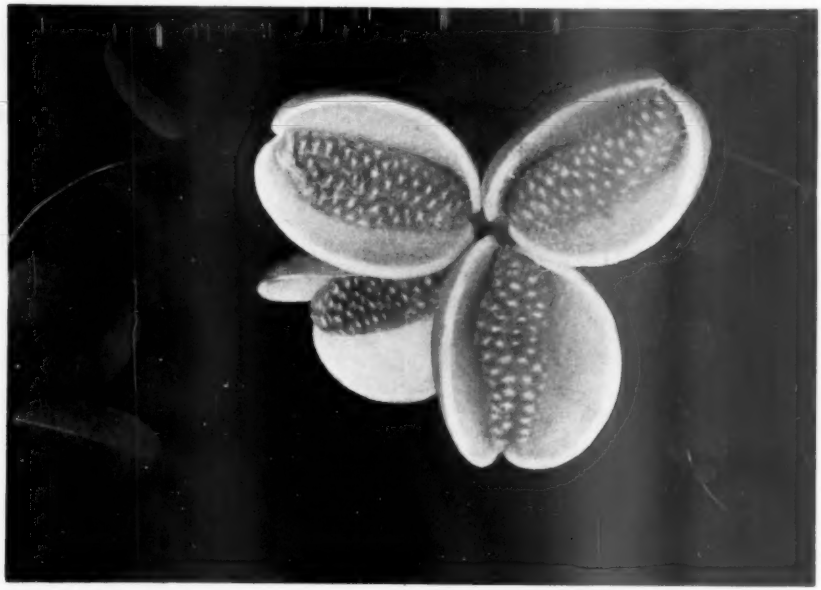
FIG. 67—Paved terrace with stone seat at East Lambrook Manor. Notice ground-cover plants in the border

Photo, M. Haworth-Booth

FIG. 68—A shrub garden showing close planting and *Azalea* 'Harvest Moon'

Photo, G. S. Thomas

FIG. 69—*Quercus suber* in the National Trust Garden at Killerton, Exeter
(See p. 214)



Photo, N. K. Gould

FIG. 70—*Akebia quinata* bearing fruit at Wisley after using the pollen of *A. trifoliata*
(See p. 215)

all. But who of us in this country, except your "pavement artist", could dream of having a garden with no lawn? In my conception of a garden as a place of repose, a garden is no garden without a lawn. Some lawn or lawns, therefore, we must have, but in our planning calculations today we must reduce them to manageable proportions.

Now paths. The business of weeding a gravel or similar path—what I call a housemaid's job—is one that I resent spending time on when I might be doing some real gardening. Of course, you can use weed-killers and flame-guns where adjacent cultivation permits, but it all takes time. In design, however, it is now an accepted rule to have as few paths as possible—and a very good rule too! The paved path, whether of the sober rectangular sort or of what I call the lunatic kind, jointed in cement, virtually eliminates all time and labour altogether, but you have to pay a price for it. Where gravel is desired MRS. FISH'S method is excellent, but even this is not cheap today and it seems to be a rule of life that whatever saves labour costs money.

Hedges normally bother us only once or twice a year, but unfortunately they seem to bother us at a time when we have a dozen other jobs to do. I am as much an admirer of a really well-tailored hedge, whether it be a democratic privet or a noble yew or holly, as anyone else, but I think we do very well, where the circumstances permit, to have for our hedges plants which need no regular trimming at all. There are plenty of them, such as escallonias, many excellent roses, *Berberis stenophylla*, *B. darwinii*, *B. verruculosa*, *Erica arborea alpina*, some rhododendrons, *Fuchsia magellanica riccartonii*, *Forsythia ovata* and various others—all very delightful to look upon.

The next great time-spenders that I mentioned in my list were the apple and the pear, but for our purpose tonight all I need to say is—grow them as cordons or espaliers or other trained forms. If you do that, you will not only save yourself an enormous amount of time but you will also get better fruit.

So far, then, we have got to this stage with our garden designing factors: subject to the agreement of our distaff side, there will be no vegetable garden, or very little; there will be only a small lawn or lawns; our hedges will be of plants that require no regular trimming; our paths will be few and these will be of stone or good concrete blocks according to our purse; and our top fruits will be grown as cordons. Thus we have now a rough, vague outline of our future garden. Now what are we going to plant?

In the very large selection of plants before us, I shall begin by cutting out, merely from the point of view of time and labour, all biennial plants. You have to sow them, thin them out, transplant them to their permanent positions, and then replace them when they finish at midsummer. For the same kind of reason, I shall cut out all bedding plants and all annuals except as fill-ups. I shall certainly not cut out hardy bulbs, which are ideal for my purpose, and I have not the heart to cut out rock plants, but I shall think about those later on.

What about herbaceous plants? It has become the fashion nowadays to declare that herbaceous borders are out-of-date, largely because of the labour which they entail, particularly in staking. I do not at all agree. It may be true of the old Robinsonian and Jekyll conceptions, but it is a fact that there are scores—hundreds, I dare say—of first-rate herbaceous plants that require no attention at all except cutting down in the autumn and an occasional feeding in the same way as you feed anything else in the garden.

Hardy herbaceous plants of this sort have a great many merits. They are relatively cheap, they give quick results, they are usually easy to propagate, most of them are long blooming, and from the design point of view they have this great advantage—one which so few people realize—that you can at will switch them about, change them, replace them and handle them in all sorts of ways in an elastic fashion. That is not a thing you can do with shrubs and trees. If you get tired of your phloxes, you can replace them with varieties of *Monarda didyma*. If you think you have put your lupins or sages in the wrong place, you can easily move them somewhere else. In that way you can get a change of scenery every year if you want it. There is no doubt that, in small gardens, herbaceous plants—not necessarily the herbaceous border as such—are likely to be the mainstay of the garden for a very long time to come, and it is a fact that we are now learning many new and very interesting ways of using them, as, for example, in bays or drifts between shrubs.

Now for shrubs and trees. Despite what I have said about herbaceous plants, I am sure most of us will agreee that shrubs are the great labour savers and time savers in the garden. It is true that a lot of them need a certain amount of pruning every year, but there are plenty that need no attention at all. These are the kinds to go for. In particular, one should go for those plants whose lower limbs closely hug the ground and smother the great majority of weeds. Probably the best of all for this purpose (provided the soil is suitable) are the species and varieties of the heather family—*Erica*, *Calluna* and *Daboecia*—which, when established, create dense mats and hammocks over the ground. Others that are very good indeed in their different ways are the splendid varieties of *Viburnum tomentosum* 'Mariesii' and 'Lanarth', the rugosa roses, nearly all barberries but especially the evergreen species, the semi-dwarf *Philadelphus* × *lemoinei* 'Manteau d'Hermine' (a first-class shrub for small gardens and borders), *Spiraea arguta*, *Chaenomeles* species, *Genista lydia* and *Cytisus nigricans* and other dwarf brooms. In my own garden no weeds grow beneath these. Nearly as good are Kurume and other evergreen azaleas and all rhododendrons with a spreading or squat habit. For suitable situations there are also the ground-hugging plants, such as *Cotoneaster dammeri*, *C. microphylla* varieties, etc., and for the awkward bare ground under trees there are epimediums, *Vinca minor* 'Bowles's variety' and *Euonymus radicans*. All these will cover the ground and largely inhibit weeds.

The next consideration in the choice of shrubs for the smaller

garden is to give first thought to those with a long season of bloom. Their number is relatively small but their quality very good. At the head of them I place the hydrangeas, *Hypericum patulum* 'Hidcote', fuchsias, many roses including the splendid 'Nevada', the hybrid musks, rugosas and floribundas, ericas if your soil is acid, *Spartium junceum*, *Cistus* species and *Hibiscus syriacus* varieties. Notice what a lot of these are shrubs that flower in late summer.

Another class of shrub to include for our purposes are those that are evergreen or evergrey; of such are several barberries, *Choisya ternata* (much hardier than is generally supposed), *Osmarea burkwoodii* (a fine, dense bush), rosemary, lavender, *Senecio laxifolius*, and *Santolina chamaecyparissus*, the 'cotton lavender'.

This leads me to what, if I may use so pretentious a phrase, one may put forward as the main principle of one's gardening philosophy. It is the creed of one who loves the garden as a whole, the garden as a picture.

The practices of the specialist have one aim—perfection in the individual bloom. I offer the general garden lover the aim of *profusion*. I would formulate that philosophy in this way—"profusion rather than perfection". Profusion of flower, profusion of foliage, density, the ground closely clothed and carpeted—that is the labour-saving idea to aim at in our plantings and in our designings. Choose your plants, whether they are shrubs or plants, to fit that philosophy. You can apply that philosophy in a number of ways according to your taste, herbaceous borders and rock gardens included. But please do not take that as necessarily an endorsement for massed beds of *Salvia splendens*, nor what is so often called "a riot of colour". A garden should not be a "riot". It can well be gay and lively, like light opera or even musical comedy, but it should never become anything like "rock-'n'-roll".

To have this kind of profusion, however, there is one labour which is inescapable, and that is good cultivation. In fact, I would say that good cultivation is the first law in labour saving and time saving. Dig deep and feed liberally, subject, of course, to the needs of your plant, for some do best on lean soils, and you will then get good results. Like a business, a garden needs sound capital to start with, and the capital of a garden is what you put in the soil. Put plenty in your soil and you will certainly get good dividends and save yourself a great deal of managerial time and trouble later on. Likewise, mulch liberally every year. Mulching is the thing. It is one of the great ways not only of encouraging the plants but also of suppressing the weeds. If you do these things, I am sure that on the whole your business will look after itself.

If you can achieve this sort of picture of a healthy garden with profuse bloom and profuse foliage, I hope that you will then be able to sit in your garden chair and admire it all—a desiderium, MR. CHAIRMAN, that I have rarely succeeded in satisfying!

MR. MICHAEL HAWORTH-BOOTH: Summing up what has been put forward and stressing the points that I believe to be the most important, I will

say that there are three main factors in the creation of a labour-saving garden: layout, method of planting and cultivation.

The first is the question of design, about which MRS. FISH most ably pointed out many of the most important factors. I would like, however, to underline the point that lawns should always be curved in outline and shape because their master is the mowing machine, a vehicle that works conveniently on a curved course. The abominable right-angled corners which, unfortunately, the architects who trespass on our garden designers' territory are fond of creating, are practically unmowable. The mowing machine should be able to pass over the lawn with an uninterrupted curving course, mowing all the available grass without ever having to check.

Do not let us think that we cannot have our specimen shrubs in the lawn in any numbers desired. A large lawn with no shrubs or trees in it is a dull lawn. There is no reason why we should not have as many flowering shrubs and trees as we wish in the lawn if only we design the beds in which they grow in a shape which is convenient for our mowing machine. This is the shape of an eyot in a river, or of a fish. It is, indeed, the motif of the delightful pattern of the Paisley shawl. Next time you mow past a flowering shrub on the lawn, take your mower past it at full speed, and if you do this on both sides you will leave the shape of a fish, in which the shrub will grow as happily as in a circle or a square.

The next question is planting. In contradiction to some of the views expressed, I hold that flowering shrubs and flowering trees are much greater labour savers than herbaceous or alpine plants. Nature is all the time trying to bring the land back to the high forest, which is her goal. The flowering shrub and, to a still greater extent, the flowering tree, satisfies her. The land is then in a stable state and she no longer seeks to establish the airborne troops, the weed seeds, that come hurtling through the air in countless millions, to find pieces of bare ground. Nature is reasonably well content if you will cover the ground with the leafy branches. Thus I hold that a flowering shrub and flowering tree garden, in which shade and shelter are given from the scorching heat of the sun and from excessive wind, is not only extremely favourable to the growth of the most beautiful plants but is the most labour-saving type of garden.

MRS. FISH pointed out that in the planted areas we should have weed-free paths. I consider, however, that paving stones are too dangerously slippery and I prefer something rather more countrified in the garden. It is not beyond the wit of our builders and concrete experts to give us a very nice rough-textured, pleasantly coloured surface on a concrete path, which is an ideal weed preventer and is rather safer to use in wet weather. We have something like 15,000 miles of stone pavements at the moment, and I do not think that we want to add to it in our gardens.

Personally, I use a sterile subsoil for my paths in planted areas. It is true that I get a few weeds, but I also get self-sown seedlings of every

shrub I grow and they are a pleasure to see. I have a simple little rule which I commend to you, and it is: Never pull up a weed whose name you do not know! I have lived with some very strange bed-fellows for a time until I have been able to see what they were, but on the whole it has paid off. Magnolias, hydrangeas, azaleas, viburnums—almost every sort of flowering shrub sows itself on the verges of my subsoil paths, and they come in useful for extensions and so on.

Next comes the question of cultivation. If we have to have a really labour-saving method of cultivation, I think we have got to take advantage of the fact that with flowering shrubs and trees we can use the mulching system, which is that we cover the ground with 6 inches of fresh fallen leaves every year.

Against that it may be held that the blackbirds will pick the leaves out on to the lawn. They will; but we have a rubber rake which enables us to rake them back again very easily. We can also use 6-inch wire netting to stop them doing it—and that is the best that we can do. It is a trifling job compared with weeding in firmly set, unmulched ground.

There are thousands of flowering shrubs. Many of them, I think, are not worth the trouble and care that we, the owners, who are now the gardeners, must give them. I think that we are rather apt to plant something that has a curious name and that looks different from anything that we have ever seen before, instead of asking ourselves: "What is the most lovely shrub we have ever seen flowering in the month of April? Let us plant that in quantity. What is the most lovely shrub we have ever seen flowering in the month of May? Let us have plenty of that. What is the most lovely thing we have seen flowering at midsummer? Let us have an equal display from that." And so on. If we do that first in accordance with the type of soil that we have, viz. either limy or acid, I think we shall do better than by putting in oddities.

To get down to details, with a normal acid soil the dominant display plants are evergreen azaleas and alpine rhododendrons in early spring; deciduous azaleas and hardy hybrid rhododendrons in late spring; roses, genistas, cistus, philadelphus and the invaluable midsummer-flowering evergreen azaleas at midsummer; and hydrangeas, senecio and hypericums for late summer. On the other hand if the soil is limy we are limited to chaenomeles, tree peonies, helianthemums and *Viburnum tomentosum* varieties in spring; followed by roses, genistas, cistus and philadelphus; and, later, by hydrangeas whose flowers will be pink or red instead of blue. We may also add fuchsias, hebes, hoherias, etc., where our garden climate is sufficiently favourable.

There is another point. Close planting has been touched upon by our other speakers. I think that is a vitally important principle. I have a system which I call the "Close Boskage" system. With this, instead of the old head gardener's idea of having every plant in a separate ring of bare soil, I have every plant purposely encouraged to interlace with the next. This is the system which Nature uses on the mountains. It gives protection, prevents weeds and provides a beautiful carpet effect.

A bed planted out at eighteen inches between plants instead of three feet will surprise you later on with its charm, provided that the foliages are diverse and predominantly evergreen and that all species are really effective flowerers. Good plants for growing as close boskage are *Lithospermum* 'Heavenly Blue', *Hebe pageana*, helianthemums, *Erica cinerea* varieties, *Calluna aurea*, *Rhododendron impeditum* and daboecias. In limy soils where lithospermum, erica, calluna, rhododendron and daboecia will not grow one would have to substitute *Vinca minor* varieties, *Genista pilosa*, *G. tinctoria flore pleno*, *Cotoneaster dammeri*, *Thymus coccinea*, *Lavandula atropurpurea nana*, etc.

The old idea of planting things in clumps does not fit in with the new flowering shrub techniques. We now plant singly, diversified, on what I call the 1 : 2 : 3 : 4 principle. We want the garden to be equally good from April to September, and so we must plant an equal number of plants to flower in the different periods, 1 being April, 2 May, 3 midsummer, and 4 late summer, July to August. If we underdo the planting of any given period there will be a dull time. We have for the last twenty years been planning and testing this, carefully diversifying the plantings so as to get an even coverage. We want to go a little further and do it a little better every year. It is really a logical development of and improvement on the herbaceous border principle of having a continuous display in one bed. But by using flowering shrubs instead of herbs we have strong wooden flower stalks that need no staking and tying, we get a beautiful year-round furnishing of winter foliages and we have permanent plants that do not need to be dug up and pulled to bits and replanted at intervals. The sense of continual improvement with less maintenance labour every year is very satisfying.

THE CHAIRMAN: No one can tell us how we are to have a garden with no labour. The subject was carefully phrased as "labour-saving, how we can save our time to do more of the things we want to do". I think perhaps our speakers minimized the part played by the specialists a little too much and the satisfaction they achieve from their perfect blooms; we really owe a great many advances to them, which have made possible other forms of gardening.

I think the value of good foliage plants is also worth stressing, things we enjoy seeing every day, something with a really decorative form and fine leaves. Beautifully shaped shrubs are important for their form just as they are for their flowering possibilities.

The two most useful pieces of advice for labour saving in gardens are still contained in two very old maxims "Never put a guinea plant into a sixpenny hole " and "Grow the plants which will do well on your own particular soil".

NOTES FROM FELLOWS

Sarcococca hookeriana

WHEN MR. SEALY and I both published some notes in the issue of the JOURNAL for July 1949 on the species of *Sarcococca* in cultivation in this country the above species was not dealt with. I had at that time never seen the plant and therefore could say nothing about it and MR. SEALY merely says that "it was in cultivation at Kew many years ago but has long since been lost".

Not long after those notes were written I came across a plant of a *Sarcococca* I did not know smothered under some bushes in the late MR. E. A. BOWLES'S garden at Myddelton House. MR. BOWLES could not remember the history of it but thought he had received it from MR. TROTTER. He very kindly gave me the plant and I have it now. When it flowered MR. SEALY identified it as *S. hookeriana*. MR. TROTTER informs me that if it came from him it must have been one of a number received many years ago from Glasnevin. I subsequently came across further examples in the late LORD ABERCONWAY'S garden at Bodnant and in MR. HILLIER'S nursery at Winchester, so that it is established that the plant is still in cultivation.

The botanical description of this sweet box can be found in Hooker's *Icones Plantarum*, t. 3470. Like all other sarcococcas in cultivation except *S. saligna*, *S. hookeriana* has minutely hairy stems and branches. It differs from *S. hookeriana* var. *digyna* in having three stigmas, deep pink anthers, broader, shorter and more leathery leaves and no purplish colouring on the young stems. The three stigmas distinguish it also from *S. humilis*, which resembles it in having red anthers, and from *S. confusa* (in which some flowers have three stigmas while others have two), the latter being further distinguished by its black, not purplish, fruits. *S. ruscifolia* and its var. *chinensis* agree with *S. hookeriana* in having three stigmas but are easily separated from it by their red fruits and by their leaves being predominately lanceolate or ovate in shape, not elliptic. I have two forms which appear to differ only in habit, one is low-growing and rhizomatous while the other forms a low straggly bush but does not appear to send out any shoots from below ground.

As a garden plant it is very slow growing and does not appear to be as worthwhile as the variety though it has the same delicious fragrance as the other sweet boxes and its deep pink anthers are attractive. It is the last of the sarcococcas to flower with me.

I am indebted to MR. J. R. SEALY of the Royal Botanical Gardens, Kew, for help in the preparation of this note.

L. PALMER

Headbourne Worthy Grange,
Winchester.

The Cork Oak (Quercus suber)

The branches of trees and shrubs are often brown and rough, even of warty appearance. The twigs of the common English elm, *Ulmus procera*, and of the winged spindle, *Euonymus alatus*, develop wings of this soft brown bark-like substance which is known as cork, and pieces half an inch wide may often be detached. This small amount would not go far to supply the needs of the bottle-making industry, however, which are provided for by the thick bark of one species of oak, *Quercus suber*, a native of countries north and south of the western end of the Mediterranean. The main centre of the cork industry is in Portugal, and the thick, rugged layers are removed from the trees every eight or ten years, after the few initial peelings are effected. When they are about twenty-five years old, the first removal of bark takes place; after two more removals from the trees the first really good crop is produced.

The above paragraph may serve as an introduction to one of the important trees of commerce, occasionally grown in this country for ornament. It is by no means as commonly planted in our warmer counties as it deserves for it is a handsome evergreen tree with most characteristic, rugged, buff-grey bark, and evergreen, slightly toothed leaves. It is a small tree compared with many well-known oaks, reaching to about 60 feet in height, with a wide, heavy head, whose branches arch and twist, all bearing their share of corky bark. It is slow-growing indeed, but beautiful at all times, and especially in the spring when its greyish young shoots appear, and in autumn when its rich green shines forth. It is stated that it reaches an age of about one hundred and fifty years, but I should have thought this was a conservative estimate.

The most northerly specimen I know in this country is a strong young tree in the Cambridge Botanic Garden, about 30 feet high and wide, while another is at Warnham Court, Horsham, Sussex; good trees are at Syon, Middlesex, and BEAN records an old specimen at Claremont, Esher, Surrey. The most inspiring group that I know is that at Killerton, the National Trust garden at Broad Clyst, Exeter, where three gnarled stems arch over one's head (Fig. 69); at Cotehele, another National Trust property near Tavistock, a very large specimen is on the decline. Young trees are planted in both properties, in fact at Killerton self-grown seedlings appear from time to time.

I have been unable to ascertain whether the specimens mentioned above belong to *Quercus suber* itself or its geographical variety, *Q. suber occidentale*, which occurs along the Atlantic seaboard north and south of the Mediterranean; this variant takes two years to ripen its acorns, in contrast to the usual one year; the acorns of both kinds are edible. The variety is more likely to be satisfactory in colder districts as it is reputed to be hardier.

G. S. THOMAS

Briar Cottage, Woking,
Surrey.

The Fruiting of Akebia quinata at Wisley

Akebia quinata is a rather uncommon plant in cultivation, but it was collected as far back as the time of ROBERT FORTUNE, i.e. in the middle of the last century. Although this deciduous or semi-evergreen climbing shrub seems reasonably hardy in England it has never become very widely known, probably because the curious fleshy fruits which are the main attraction, are very seldom, if ever, produced unaided in cultivation.

The genus *Akebia* is a member of a small family with the formidable name *Lardizabalaceae*, which is placed near the berberis family in systems of classification. The seven genera are mostly of climbing shrubs, the majority from East Asia, but rather strangely two genera are natives of Chile. *A. quinata* and *A. trifoliata* from China and Japan are the two species of the genus usually grown, the specific names denoting the number of leaflets, which thus serves as a ready means of distinguishing them.

The purplish flowers are borne in racemes and in both species are very similar. The plants are monoecious with the larger female flowers towards the base of the raceme and the smaller lighter coloured male flowers near the apex. There are no petals, but each flower has three coloured sepals. At Wisley I had seen these flowers for several years upon both species, but never any fruit. I was informed that they needed cross-pollination, so in May 1956 I took pollen from *A. trifoliata* to *A. quinata* and dusted it upon the glistening drop of mucilage which is always present upon the mature stigmas. A reciprocal cross was made but this produced no results. Pollen from a plant of *A. quinata* growing in a garden in Ewhurst, Surrey, was given to me as well and this also resulted in fertilized fruits appearing on our plant of *A. quinata*. The fruits developed slowly throughout the summer and in September I noticed that the small green sausage-like berries were changing colour when about $3\frac{1}{2}$ inches long. The ovary wall became an unusual light purple, and finally a longitudinal split occurred down one side. This revealed the glistening white inner walls of the ovary and lying on a parietal placenta on one side were a number of roundish black seeds embedded in a translucent glutinous pulp. Each seed was exposed to the exterior by an opening in the pulp (Fig. 70.)

Since several female flowers are borne on a raceme several of these remarkable fruits occurred on a single axis, and it was a spray of these which received the Award of Merit on October 16, 1956. The fruits are stated to be edible, but to a Western palate this is open to some doubt.

I stated above that fruits from pollen of both species were obtained on *A. quinata*, and those which resulted from *A. trifoliata* appeared to be slightly shorter and fatter than the others. A hybrid named *A.* × *pentaphylla* has been recorded between the two species, where their distributions overlap in Japan.

W. SYKES

R.H.S. Gardens, Wisley.

PLANTS AND PROBLEMS—XXXIII

PLANTING TOMATOES

Question. Could you give me details of preparing ground for, and planting of, tomatoes? Usually I obtain plants from my local nurseryman but I have found in the past that my plants tend to become overcrowded.

Answer. Tomatoes like a site which is open to all the sun and not shaded by other crops. The ground needs careful preparation and ideally it should be dug, applying a dressing of farmyard manure during the winter. In early May apply 5 oz. per square yard of National Growmore fertilizer or similar quantity of a proprietary fish manure. The plants will require stout stakes which should be put in position before planting takes place. The usual planting distance is 3 feet between rows with 18 inches between plants within the rows. Alternatively you can make a double row 2 feet apart with 5 feet between each double row. The date of planting depends on the district, but in the south of England the third week in May is quite suitable except for frost pockets where the last week in May is safer. Plant firmly with a trowel and then water in if the ground is dry. Subsequently water will be beneficial after the first truss has set and in a dry season a mulch of compost or straw should be applied.

CONTROL OF SLUGS

Question. Would you please comment on the possibility that slug-baits attract so many slugs to the vicinity that, though most are killed, the number surviving exceeds the number which were originally present.

Answer. This situation is often likely to arise with any control method which entails the use of poison baits which are not 100 per cent effective, but if baiting is continued over a period of time the numbers of the pest will eventually dwindle to negligible proportions. How long this would take is, of course, dependent on the size of the pest population in the surrounding area. If, for instance, your neighbours were negligent in dealing with slugs in their gardens and allowed large numbers to build up, the process of extermination would take much longer than if they, too, were taking control measures.

The danger of attracting large numbers of pests by baiting is recognized by insecticide manufacturers and, whenever possible, better control methods are introduced. In the case of slugs, liquid suspensions of metaldehyde have been put on the market in recent years. These do not incorporate any attractant and are simply sprayed on the plants and the surrounding soil. Any slugs or snails which crawl over the treated surfaces during the next 7 days will be killed, provided that no heavy rain falls during that period.

PLANTS TO WHICH AWARDS HAVE BEEN MADE IN 1956 AND 1957

CAMELLIA

Camellia japonica 'Coquetti' A.M. April 17, 1956. This is an old European variety and is one that is particularly suited for growing in the open. The leaves are inclined to be smallish and, characteristically, are variable in shape, some being ovate and some elliptic while the margins are obtusely serrate. On the plant shown the flowers were 4 inches across with the petals regularly imbricated to form a complete double. In the main the petals were emarginate although a few were rounded and all were coloured Delft Rose (H.C.C. 020/1–020). Exhibited by Messrs. J. Waterer, Sons and Crisp Ltd., Bagshot, Surrey.

CHRYSANTHEMUMS

The Royal Horticultural Society and The National Chrysanthemum Society have made jointly the following awards to chrysanthemums after exhibition at the Shows of The Royal Horticultural Society and The National Chrysanthemum Society, on the recommendation of the Joint Chrysanthemum Committee.

EARLY-FLOWERING CHRYSANTHEMUMS

Chrysanthemum 'Alice Katherine Johnson' A.M. August 14, 1956, as a variety for show purposes. Section 22, Incurving, large-flowered, white. Flowers 5¼ inches diameter; florets long, medium width, overlapping, flat, tips notched; outer florets white, inner florets cream. Raised and shown by Messrs. J. & T. Johnson, Tibshelf, Derbyshire.

Chrysanthemum 'Amy Shoesmith' A.M. October 2, 1956, as a variety for show purposes. Section 22, Incurving, medium-flowered, pink. Flowers 5¼ inches diameter; florets long, medium width, overlapping, slightly pointed, flat to channelled, Persian Rose (H.C.C. 628/2), reverse paler Persian Rose (H.C.C. 628/2). Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd., Mayford Nurseries, Westfield, Woking, Surrey.

Chrysanthemum 'Appeal' A.M. September 26, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered, red. Flowers 5½ inches diameter; florets medium length and breadth, overlapping, slightly pointed, quilled, slightly notched, a slightly brighter shade of red than Cardinal Red (H.C.C. 822). Raised by Mr. H. Shoesmith, V.M.H., and shown by Mr. Frank Rowe, Rylands Nurseries, Wellington, Somerset.

Chrysanthemum 'Blissful' A.M. September 26, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered, yellow. Flowers 5¾ inches diameter; florets long, medium width, overlapping, slightly pointed, inner florets flat, outer florets quilled, outer florets cream, inner florets Aureolin (between H.C.C. 3/1 and 3/2),

reverse pale cream. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Cameo' A.M. September 26, 1956, as a variety for show purposes. Section 24, Pompon, tall, white. Flowers $2\frac{1}{10}$ inches diameter; florets medium length and width, overlapping, notched, flat to channelled, outer florets cream, inner florets near Dresden Yellow (H.C.C. 64/3), reverse pale cream. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Capital' A.M. September 26, 1956, as a variety for show purposes. Section 21, Reflexed, large-flowered, white. Flowers $6\frac{3}{4}$ inches diameter; florets long, broad, overlapping, slightly pointed, flat to channelled, tips of florets incurving, outer florets white, inner florets greenish-yellow. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Coral' A.M. September 11, 1956, as a variety for show purposes. Section 21, Reflexed, large-flowered, pink. Flowers 7 inches diameter; florets long, broad, overlapping, pointed, channelled, outer florets Persian Rose (H.C.C. 628/2), inner florets Carmine Rose (H.C.C. 621/2), flushed Persian Rose (H.C.C. 628/2), reverse creamy-rose. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Demure' A.M. September 11, 1956, as a variety for show purposes. Section 21, Reflexed, large-flowered, pink. Flowers $5\frac{1}{4}$ inches diameter; florets medium length, narrow, overlapping, slightly pointed, Salmon (H.C.C. 412), heavily flushed Magenta (H.C.C. 27/3), reverse creamy-gold. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Fancyfree' A.M. September 11, 1956, as a variety for show purposes. Section 22, Incurving, large-flowered, white. Flowers $5\frac{1}{4}$ inches diameter; florets medium length and width, overlapping, slightly pointed, channelled, outer florets white, inner florets pale cream. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Flower Song' A.M. October 2, 1956, as a variety for show purposes. Section 22, Incurving, large-flowered, yellow. Flowers $5\frac{1}{2}$ inches diameter; florets long, medium width, overlapping, slightly pointed, channelled, Lemon Yellow (H.C.C. 4), reverse Canary Yellow (H.C.C. 2/2). Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'George Wilson' A.M. September 26, 1956, as a variety for show purposes. Section 21, Reflexed, large-flowered, red. Flowers 6 inches diameter; florets long, medium width, overlapping, slightly pointed, quilled, slightly notched, a brighter shade of red than Cardinal Red (H.C.C. 822), reverse buff. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Imp' A.M. September 26, 1956, as a variety for show purposes. Section 24, Pompon, dwarf, red. Flowers $1\frac{3}{4}$ inches diameter; florets short, broad, overlapping, flat to slightly channelled,

crimson near Blood Red (H.C.C. 820). Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Incurving Brenda Talbot' A.M. October 2, 1956, as a variety for show purposes. Section 22, Incurving, medium-flowered, pink. Flowers 5 inches diameter; florets medium length, broad, overlapping, slightly pointed, flat to slightly channelled, outer florets a shade near Phlox Pink (H.C.C. 625/3), inner florets touched creamy apricot, reverse silvery. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Incurved Golden Beauty' A.M. September 26, 1956, as a variety for show purposes. Section 20, Incurved, large-flowered, yellow. Flowers $4\frac{4}{5}$ inches diameter; florets medium length, broad, overlapping, slightly pointed, channelled, Lemon Yellow (H.C.C. 4). Shown by L. Mills, Esq., Creswick, Gipsy Road, Welling, Kent.

Chrysanthemum 'Jennifer Pearce' A.M. September 26, 1956, as a variety for show purposes. Section 22, Incurving, large-flowered, yellow. Flowers 6 inches diameter; florets long, medium width, overlapping, slightly pointed, channelled, Buttercup Yellow (H.C.C. 5/1). Raised by Mr. H. Shoesmith, V.M.H., and shown by R. G. Pearce, Esq., 65 Longfellow Road, Worcester Park, Surrey.

Chrysanthemum 'Joseph Reid Johnson' A.M. August 28, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered, light bronze. Flowers 6 inches diameter; florets long, medium width, overlapping, slightly pointed, quilled, a shade between Buttercup Yellow (H.C.C. 5) and Yellow Ochre (H.C.C. 07), reverse deeper. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Kismet' A.M. September 19, 1956, as a variety for show purposes. Section 22, Incurving, medium-flowered, light bronze. Flowers $5\frac{1}{4}$ inches diameter; florets medium breadth and length, overlapping, channelled, light orange-bronze, reverse gold. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Lady Superior' A.M. August 28, 1956, as a variety for show purposes and for cutting for market. Section 21, Reflexed, large-flowered, white. Flowers $6\frac{1}{2}$ inches diameter; florets long and broad, overlapping, slightly pointed, channelled, outer florets white, inner florets pale cream. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Maid Marion' A.M. September 26, 1956, as a variety for show purposes. Section 22, Incurving, large-flowered, pale pink. Flowers $5\frac{1}{2}$ inches diameter; florets medium length and breadth, overlapping, slightly pointed, channelled, outer florets Persian Rose (H.C.C. 628/3), inner florets paler and more creamy than outer florets. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Marketeer' A.M. September 19, 1956, as a variety for show purposes and for cutting for market. Section 21,

Reflexed, medium-flowered, white. Flowers 4 inches diameter; florets medium length and breadth, overlapping, slightly pointed, inner florets channelled, outer florets quilled, white, reverse greenish-white. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Pauline Whetton' A.M. October 2, 1956, as a variety for show purposes. Section 22, Incurving, large-flowered, red. Flowers 5½ inches diameter; florets long, medium width, overlapping, slightly pointed, channelled, bright rich crimson-bronze, reverse near Straw Yellow (H.C.C. 604/1). Raised and shown by Messrs. Riley, Alfreton Nurseries, Woolley Moor, Derbyshire.

Chrysanthemum 'Peter Shoesmith' A.M. September 11, 1956, as a variety for show purposes. Section 21, Reflexed, large-flowered, light bronze. Flowers 7¼ inches diameter; florets long, medium width, overlapping, slightly pointed, quilled, golden-amber with flush of crimson, reverse gold. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Regalia' A.M. September 11, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered, purple. Flowers 6¼ inches diameter; florets long, broad, overlapping, slightly pointed, flat to slightly quilled, a richer shade of Spiraea Red (H.C.C. 025), reverse silvery red. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Sarah Riley' A.M. October 2, 1956, as a variety for show purposes. Section 21, Reflexed, large-flowered, pink. Flowers 5¾ inches diameter; florets long, narrow, overlapping, slightly pointed, flat to slightly quilled, tips indented and incurving, Persian Rose (H.C.C. 628/3), reverse slightly paler. Raised and shown by Messrs. Riley.

Chrysanthemum 'Snowdance' A.M. September 11, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered, white. Flowers 5¾ inches diameter; florets long, medium width, overlapping, quilled, outer florets white, inner florets cream. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Starlight' A.M. September 11, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered, yellow. Flowers 5½–5¾ inches diameter; florets medium length, broad, overlapping, pointed, inner florets channelled, outer florets quilled, a clear bright shade of Canary Yellow (H.C.C. 2). Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Sultan' A.M. September 26, 1956, as a variety for show purposes. Section 21, Reflexed, large-flowered, red. Flowers 5½ inches diameter; florets medium length, broad, overlapping, slightly pointed, channelled, outer florets with tips slightly incurving, reddish-bronze, reverse buff. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Sunavon' A.M. September 19, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered,

yellow. Flowers 6 inches diameter; florets long, medium width, overlapping, slightly quilled, Aureolin (H.C.C. 3/1). Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'Sweet Melody' A.M. September 11, 1956, as a variety for show purposes. Section 20, Incurved, large-flowered, yellow. Flowers 5⅛ inches diameter; florets very long and broad, overlapping, slightly pointed, channelled, tightly incurved, Canary Yellow (H.C.C. 2/2). Raised and shown by Messrs. Riley.

Chrysanthemum 'Tiptoe' A.M. September 26, 1956, as a variety for show purposes. Section 24, Pompon, tall yellow. Flowers 2 inches diameter; florets short, broad, overlapping, slightly pointed, flat to channelled, Aureolin (H.C.C. 3), green at centre of flower, reverse same as outer. Raised and shown by Messrs. J. & T. Johnson.

Chrysanthemum 'White John Woolman' A.M. August 14, 1956, as a variety for show purposes. Section 20, Incurved, large-flowered, white. Flowers 4½ inches diameter; florets long, medium width, overlapping, slightly pointed, channelled, outer florets cream. Shown by Mr. G. R. Bacon, Heathfield Nurseries, Eccleshill Road, Bradford, Yorkshire.

Chrysanthemum 'White Swan' A.M. October 2, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered, white. Flowers 5¾ inches diameter; florets long and broad, overlapping, slightly pointed, flat to channelled, outer florets ivory white, inner florets greenish-cream. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'William Dodd' A.M. September 19, 1956, as a variety for show purposes. Section 21, Reflexed, medium-flowered, light bronze. Flowers 5½ inches diameter; florets long, medium width, overlapping, slightly pointed, flat to slightly quilled, outer florets rich amber, inner florets with very slightly bronze flush, reverse gold. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

MID-SEASON AND LATE-FLOWERING CHRYSANTHEMUMS

Chrysanthemum 'Apricot Princess Anne' A.M. November 2, 1956, as a variety for show purposes. Section 5, Reflexed decorative, bronze. Flowers 5¾ inches diameter; florets medium length and width, overlapping, pointed, quilled, a clear shade of orange near Spanish Orange (H.C.C. 010/1). Shown by Messrs. J. W. Valentine & Son, Meadowlea Nursery, Dobb's Weir, Hoddesdon, Herts.

Chrysanthemum 'Audrey Shoesmith' A.M. November 2, 1956, as a variety for show purposes. Section 1, Exhibition incurved, large-flowered, pink. Flowers 5 inches diameter, 4 inches deep; florets medium length and width, overlapping, pointed, channelled and very tightly incurved, a shade of pink near Phlox Purple (H.C.C. between 632/3 and 632/2). Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Bill Walters' A.M. October 16, 1956, as a variety for show purposes. Section 17, October-flowering, incurving, large-flowered, yellow. Flowers 5¼ inches diameter; florets long and broad, overlapping, pointed, channelled, Aureolin (H.C.C. 3/1), reverse slightly paler. Raised and shown by Messrs. Riley.

Chrysanthemum 'Champagne' A.M. November 2, 1956, as a variety for show purposes. Section 3, Large exhibition incurving, other colour. Flowers 8 inches diameter, 7 inches deep; florets very long and broad, channelled, twisted giving a swirled effect, reverse of outer florets a shade near Phlox Purple (H.C.C. 632/3), reverse of inner florets creamy-buff-yellow. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Christmas Flame' A.M. December 11, 1956, as a variety for cutting for market. Section 5, Reflexed decorative, medium-flowered, red. Flowers 6½ inches diameter; florets long, medium width, overlapping pointed, slightly quilled, a deep shade of red near Rhodonite Red (H.C.C. 0022), reverse light bronze. Raised by Mr. Shoesmith, V.M.H., and shown by Mr. Frank Rowe.

Chrysanthemum 'Christmas Greeting' F.C.C. December 11, 1956, as a spray variety for cutting for market. Section 5, Reflexed decorative, medium-flowered, spray, red. Described R.H.S. JOURNAL, **79,** p. 280 (**A.M.** 1953). Shown by Messrs. Colham Green Nurseries Ltd., Chapel Lane, Hillingdon, Middlesex.

Chrysanthemum 'Coon' A.M. November 2, 1956, as a variety for show purposes. Section 1, Exhibition incurved, medium-flowered, light bronze. Flowers 4¼ inches diameter, 4 inches deep; florets medium length, broad, overlapping, pointed, channelled, tightly packed, reverse of floret a pale cream bronze, a few lower florets visible and coloured reddish bronze on the upper surface. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Corsair' A.M. November 27, 1956, as a spray variety for show purposes and for cutting for market. Section 5, Reflexed decorative, medium-flowered, spray, yellow. Flowers 2⅜ inches diameter; florets short, narrow, overlapping, channelled, blunt, Chrome Yellow (H.C.C. 605). Shown by Messrs. Greenyer Bros. Ltd., Broadwater Green Nurseries, Worthing, Sussex.

Chrysanthemum 'Elizabeth Edney' A.M. November 2, 1956, as a variety for show purposes. Section 3, Large exhibition, incurving, white. Flowers 7¾ inches diameter, 5½ inches deep; florets very long and broad, channelled, curving inwards at tips, white, green at centre of flower. Raised and shown by Messrs. H. Woolman Ltd., Shirley, Birmingham.

Chrysanthemum 'Florence Shoesmith' A.M. November 13, 1956, as a variety for show purposes. Section 5, Reflexed decorative, large-flowered, red. Flowers 8½ inches diameter; florets long, broad, flat with tips incurving, deep crimson, reverse yellow. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Forty Niner' A.M. November 13, 1956, as a spray variety for show purposes and for cutting for market. Section 8, Pompons, large-flowered, yellow. Flowers 2½ inches diameter; florets short, narrow, quilled, tips incurving, Buttercup Yellow (H.C.C. 5/1). Shown by Messrs. Greenyer Bros. Ltd.

Chrysanthemum 'Friar Tuck' A.M. November 2, 1956, as a variety for show purposes. Section 2, Large exhibition, bronze. Flowers 8 inches diameter, 6 inches deep; florets long, broad, quilled, light reddish-bronze, reverse buff-yellow. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Gallant' A.M. November 2, 1956, as a variety for show purposes. Section 4, Medium exhibition, pink. Flowers 7 inches diameter, 6½ inches deep; florets long, medium width, overlapping, pointed, quilled, tips indented and slightly incurving, near Mallow Purple (H.C.C. 630), outer florets slightly paler, reverse silvery pink. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Good Taste' A.M. October 16, 1956, as a variety for show purposes. Section 16, October-flowering, reflexed, large-flowered, salmon. Flowers 6 inches diameter; florets long, broad, slightly quilled, overlapping, pointed, Chrome Yellow (H.C.C. 605/2), outer florets pinkish-mauve. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Green Goddess' A.M. November 2, 1956, as a variety for show purposes. Section 2, Large exhibition, other colour. Flowers 8¾ inches diameter, 7½ inches deep; florets very long and broad, channelled, tips of petals curling in, Pea Green (H.C.C. between 61/3 and 61/2). Raised and shown by Messrs. H. Woolman Ltd.

Chrysanthemum 'Marie Brunton' A.M. October 16, 1956, as a variety for show purposes. Section 17, October-flowering, incurving, large-flowered, yellow. Flowers 5¼ inches diameter; florets long, broad, overlapping, pointed, channelled, Buttercup Yellow (H.C.C. between 5/1 and 5). Raised by Mr. H. Shoesmith, V.M.H., and shown by Mr. Frank Rowe.

Chrysanthemum 'Mary Selvey' A.M. November 13, 1956, as a variety for show purposes. Section 5, Reflexed decorative, large-flowered, other colour. Flowers 7 inches diameter; florets long, medium width, incurved and slightly quilled, near Magnolia Purple (H.C.C. 030/1), reverse prominent on inner florets, buff yellow. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Peace' A.M. November 2, 1956, as a variety for show purposes. Section 1, Exhibition incurved, large-flowered, white. Flowers 5¼ inches diameter, 5 inches deep; florets long, broad, overlapping, pointed, channelled, white. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Red Leader' A.M. September 11, 1956, as a variety for show purposes. Section 16, October-flowering, reflexed,

large-flowered, red. Flowers 6½ inches diameter; florets long, medium width, overlapping, slightly pointed, quilled, rich reddish-crimson, reverse buff-yellow. Shown by Messrs. Colham Green Nurseries Ltd.

Chrysanthemum 'Rival's Rival' A.M. December 11, 1956, as a variety for cutting for market. Section 6, Incurving, decorative, large-flowered, light bronze. Flowers 5¾ inches diameter, 4 inches deep; florets medium length, broad, overlapping, pointed, channelled, reverse of floret Empire Yellow (H.C.C. 603), inside of floret flushed pale bronze. Raised by Mr. A. G. Vinten and shown by Messrs. A. G. Vinten Ltd., Oldland Nurseries, Balcombe, Sussex.

Chrysanthemum 'Royal Oak' A.M. November 2, 1956, as a variety for show purposes. Section 2, Large exhibition, other colour. Flowers 8 inches diameter, 7½ inches deep; florets long, broad, overlapping, pointed, slightly quilled, tips of florets twisted and incurving, near Persian Rose (H.C.C. 628/3), flushed light bronze, reverse creamy-white. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Senator' A.M. November 2, 1956, as a variety for show purposes. Section 5, Reflexed decorative, medium-flowered, red. Flowers 6 inches diameter; florets medium length and width, overlapping, blunt, flat to slightly channelled, rich crimson, reverse buff-yellow. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Silver Rose' A.M. November 13, 1956, as a variety for show purposes. Section 6, Incurving decorative, large-flowered, pink. Flowers 6 inches diameter, 3¾ inches deep; florets long, broad, overlapping, blunt, flat to slightly incurving, reverse silvery-pink, inside barely visible Fuchsia Purple (H.C.C. 28/2). Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Suez' A.M. November 13, 1956, as a variety for show purposes. Section 2, Large exhibition, light bronze. Flowers 11 inches diameter, 7 inches deep; florets very long and broad, flat to slightly recurved, overlapping, pointed, outer florets pale chestnut-bronze, inner florets chestnut-bronze. Raised and shown by Messrs. H. Woolman Ltd.

Chrysanthemum 'Tangerine' A.M. November 2, 1956, as a variety for show purposes. Section 6, Incurving decorative, large-flowered, yellow. Flowers 6¼ inches diameter, 4 inches deep, florets long, medium width, channelled, overlapping, pointed, near Saffron Yellow (H.C.C. 7/2). Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Winter Sun' A.M. November 2, 1956, as a variety for show purposes. Section 1, Exhibition incurved, large-flowered, yellow. Flowers 5 inches diameter, 5 inches deep; florets long, medium width, channelled, overlapping, pointed, Mimosa Yellow (H.C.C. 602/1). Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Yellow Marvel' A.M. November 2, 1956, as a variety for show purposes. Section 1, Exhibition incurved, large-flowered, yellow. Flowers 5¼ inches diameter, 4 inches deep; florets long, broad, channelled, overlapping, pointed, Canary Yellow (H.C.C. 2/1). Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

Chrysanthemum 'Yellow Orbit' A.M. November 13, 1956, as a variety for show purposes. Section 4, Medium exhibition, yellow. Flowers 6 inches diameter, 6½ inches deep; florets long, narrow, flat to slightly incurving, outer florets Empire Yellow (H.C.C. 603/1), inner florets slightly paler. Raised by Mr. H. Shoesmith, V.M.H., and shown by Messrs. H. Shoesmith Ltd.

ORCHIDS

Cymbidium (Runnymede g.) 'Amber Flash' A.M. March 5, 1957. Several plants from this grex have received awards before and the colour range is very noticeable. This latest cultivar has large orange flowers. Upon the plant exhibited was a spike bearing six large flowers, each flower about 4 inches across by 3 inches deep. The tepal reverses are reddish-orange and it is this colour which diffuses through to give the general orange-yellow appearance from the front. The dorsal is incurved whilst the labellum is recurved. The latter tepal is pale yellow with dark red blotches coalescing towards the lower portion. The column is sprinkled with fine spots inside. The parents are *C.* (Babylon g.) 'Castle Hill' and *C.* 'Roxana'. Exhibited by Lt.-Col. The Lord Hothfield, Castle Hill, Engelfield Green, Surrey.

Cymbidium (Roxette g.) 'Stonehurst' A.M. February 19, 1957. The parents of this cultivar are *C.* 'Claudette' and *C.* 'Roxana'. Upon the plant exhibited were nine flowers. The colour of all tepals except the labellum is a vivid lime green. In addition faint reddish dots occur towards the base of the tepals. The dorsal tepal is incurved. The labellum, in sharp contrast to the other tepals, is basically creamy-white, with prominent velvety-red markings round the wide lower portion. A thin red line runs up the centre towards the crest and a narrow band of pale yellow occurs at the margin. This undulating labellum is surmounted by a yellow column. Exhibited by R. Strauss, Esq., Stonehurst, Sussex.

Cypripedium (Paeony g.) 'Regency' A.M. March 5, 1957. This cultivar was obtained by crossing *C.* 'Noble' and *C.* 'Bellissaire'. Upon the plant exhibited were two flowers, each 4 inches across by 4 inches deep. The flower has a neat compact appearance with a large wide dorsal and a rather small labellum. The dorsal has a broad irregular white margin and a purplish centre. A few streaks of yellow are present in the latter colour. The lateral tepals have a sharp dividing line with brown predominant in the upper half and yellowish-brown in the lower part. These tepals are also spotted towards the base. The

glossy labellum is mauve. Exhibited by Messrs. R. & E. Ratcliffe, Downlands Nursery, Chilton, Didcot.

Laeliocattleya (New York g.) 'Hope' A.M. February 5, 1957. This grex is a relatively old one and has produced several Award of Merit cultivars. This latest one has a flower which was 6 inches deep and 5 inches across on the plant exhibited. The two prominent lateral tepals are large and pure white with scalloped margins and recurved apices. In striking contrast the labellum is a rich velvety magenta-purple with two prominent patches of orange at each side. Orange streaks extend from these patches down the centre. The fimbriated margins tend to enclose the column. The three small oval tepals of the outer whorl are white and have entire margins. The parentage is *Cattleya* (Maggie Raphael g.) 'alba' × *Laeliocattleya* 'Aconcagua'. Exhibited by H. W. B. Schroder, Esq., Dell Park, Englefield Green, Surrey.

Lycaste (Brugensis g.) 'Spencer Park' A.M. February 19, 1957. This hybrid arose as a result of crossing the South American species *L. gigantea* and the Central American *L. skinneri* var. *armeniaca*. Two other cultivars of the grex received awards many years ago. 'Spencer Park' has a large triangular-shaped flower. The outer three tepals form a large triangle and have recurved apices. The tepals of the inner whorl are inserted between the outer ones. The inner tepals, especially the labellum are recurved also, and the latter tepal has a slightly frilled margin. The basic colour is whitish with a faint suggestion of apricot colouring. The labellum has a more pronounced apricot flush towards the deep orange crest. Upon the plant exhibited were two flowers each 5 inches by 5 inches and borne in a half upright position. Exhibited by Messrs. H. Dixon & Sons, Spencer Park Nursery, Wandsworth Common, London, S.W.18.

BOOK NOTES

"A Textbook of Plant Virus Diseases." By Kenneth M. Smith. 2nd Edition. Pp. vii + 652. 94 illustrations. (Churchill, 1957.) 65s.

Although research workers sometimes bemoan the lack of interest shown in virus diseases by many growers, advisers will agree that awareness of these diseases has increased rapidly during recent years. Much of the stimulation has been provided by the writings of Dr. Kenneth Smith, who first published his textbook twenty years ago. Many new discoveries have been made since then, and plant pathologists and advisers in agriculture and horticulture have eagerly awaited a second edition. They will not be disappointed, for the author has been most painstaking in his compilation and the book is as up to date as possible; in fact, some of the work quoted has not yet been published elsewhere.

The plan of the book is radically different from that used in the first edition, and it is now much easier to use as a book of reference. The diseases are described in alphabetical order, using the English common name, e.g. potato leaf-roll virus, instead of "Solanum virus 14", which few workers used, because they could not remember if this was leaf-roll or one of the other eighteen potato viruses. For those who still use such a system, and for those who believe in the mystical properties of a binomial system of nomenclature, there is an Index of Synonyms.

The treatment of each disease is essentially the same as in the first edition: first the known properties of the virus are described briefly, e.g. transmission, thermal inactivation point, dilution end-point, resistance to ageing, serological end-point, size

and shape of virus particle, and differential hosts. Then the diseases caused by the virus in the different plant families and their known geographical distribution are described in reasonable detail. Finally, control measures are described if they have been formulated.

Most of the illustrations are new, and as many of the 93 figures (the 94th seems to be missing) contain up to six photographs, the book can be described as profusely illustrated. The cover "blurb" misleads, however, when it says that "all the most important virus diseases are illustrated", for there is no picture of four of the most important virus diseases of vegetables in Britain—potato leaf-roll, beet yellows, cauliflower mosaic and lettuce mosaic. There is a fairly full bibliography, arranged alphabetically, for those who wish to refer to original papers. Unfortunately, Dr. Smith does not use the journal title abbreviations usually used in Britain and recommended by the *World List of Scientific Periodicals*.

The chapter on the vectors of plant viruses, which took up one-sixth of the first edition, has been omitted, partly to allow for the expansion of the number of viruses described to over three hundred, but also no doubt because the taxonomy of aphids and other vectors has changed greatly and their numbers have increased during the last twenty years, so that the original chapter would have required considerable revision and expansion.

There is one serious omission that will detract from the usefulness of the second edition—a host-plant index. Many of the names of the viruses contain a reference to one host-plant, e.g. cucumber mosaic virus, but this and other viruses can infect plants in many families, and virus research workers, advisers and growers would have made good use of an alphabetical host-list enumerating all the viruses to which each plant is susceptible and the diseases they cause. There is no general index (and apart from this question of host-plants, one is not needed) so there is no way of obtaining this information without thumbing through the book.

The price is high, but not unreasonable for such a book in these days. As a reference book it can be recommended to progressive horticulturists, both private and commercial; reading it will broaden their knowledge of virus diseases and they will be able to "run down" many of their troubles with the aid of the pictures and text. The diagnosis of virus disease from plant symptoms alone is notoriously difficult, however, and in serious attacks growers will be wise to consult specialist advisers.

L. BROADBENT

"Principles of Fungicidal Action." By James G. Horsfall. Vol. 30, New Series of Plant Science Books. (U.S.A.: Chronica Botanica Co., Waltham, Mass. London: Wm. Dawson & Sons Ltd.) $6.50. 52*s*.

This book is about the mechanisms by which those substances we call fungicides act upon fungi which cause plant disease so as to inhibit or kill them. The fungi concerned are, of course, those which by their parasitic habit kill or injure plants valuable to us, but Dr. Horsfall does not concern himself with the methods of application and use of fungicides in general. He goes far deeper to deal with the mechanisms concerned in toxicity and shows the exact way, chemically or otherwise, by which different chemical compounds exert their toxic effect on the cell contents of the fungus or its spores, to cause death. The question of injury to the host plant (the so-called phytotoxicity) must also figure largely in research work of this kind. The book of fifteen chapters contained in about 300 pages begins with a brief review of the history of fungicides from the days of Homer onwards and shows how the growth of knowledge about these substances slowly accumulated through the ages with a tremendous acceleration in the last twenty years. Discoveries have been great and techniques of extreme importance have been evolved, so that now the testing of substances for use as fungicides has reached a very high state of perfection. In this work physics and chemistry play an important part, for it includes studies on the molecular structure of the fungicide as well as of the exterior membrane of the fungal cell and the cell wall. The rise in importance during the last ten years of the so-called organic fungicides, the dithiocarbamates, the quinones, the imidazolines to name only a few, and their very latest application to plant protection and disease control are dealt with in a most readable manner. The research on systemic fungicides and the use of antibiotics bring a new approach even to the problem of the rather intractable virus diseases and this branch of the work promises well for the future of crop protection. To anyone interested in research on fungicides as such the book must be fascinating and in our opinion most practical advisers in plant disease control could read it with interest and profit. It is well set out, the text is good and easy to read, the bibliography at the end is an extensive one of some thirty

pages and we believe those interested in the subject will find it stimulating. For a book of this kind the price, in our opinion, is very reasonable.

D. E. GREEN

"Cabbage Varieties (Sluitkoolrassen)." By J. R. Jensma. 150 pp. Illus. (Instituut voor veredeling van Tuinbouwgewassen, Wageningen, Holland.) Fl. 13.50.

This volume describes the origin, uses, and morphological characteristics of 36 varieties of white cabbage, 24 varieties of savoy cabbage, and 9 varieties of red cabbage, and also lists 270 synonyms of these varieties. Each variety is illustrated by an excellent plate showing both the outward appearance and the internal structure of the head. It is noted in the introduction that the term synonym is used in its widest sense to include strains of similar morphological type but not necessarily of similar commercial value. Whilst this synthetic approach may be justified by the need for clarity in presentation, it has led for example to the classing of the different varieties 'Harbinger' and 'Offenham' as synonymous, on account of their similar morphological type. The book will be primarily of interest to Dutch growers since the varieties are presumably those which have appeared in official Dutch trials. Of the 339 names listed less than 50 are likely to be met with in Britain, but the book provides a valuable reference to the range of material examined. The text is in Dutch and English.

A. G. JOHNSON

"Proceedings of the First International Conference on the Use of Antibiotics in Agriculture." Illus. (National Academy of Sciences, Washington 25, D.C., U.S.A.) $2.50.

The papers in this report are for the most part concerned with animal rather than plant responses, but there was one session on crop usage and plant pathology. The use of antibiotics is a relatively new method of disease control, but it is forecast that in the future they may be used more widely. Streptomycin, for instance, can be used for control of "fireblight" in apples and pears, bacterial spot of tomatoes, bacterial wilt of chrysanthemums, as well as other diseases. The costs of control by this method are still high and more experiments are needed before it can become general commercial practice, but for research workers this will prove a valuable report.

PATRICK M. SYNGE

"Ornamental Conifers." By V. Chaudin. Translated by V. Higgins. 114 pp. Illus. (Crosby Lockwood, London, 1956.) 17s.

Although the book appears small for such a vast subject, it gives readers all the information they will want—and more—when they consider planting conifers. Following the six introductory chapters which cover classification, distribution, cultivation, etc., there are useful lists of species and their varieties suitable for various soils and sites. The main part of the book is, however, devoted to descriptions of the main genera and species, arranged in alphabetical order. The book is generously illustrated in colour and monochrome; the latter is very good but in some cases the colour work is disappointing.

Many readers will have reason to be grateful to Mrs. Higgins for making this book available in this country.

"Mulching." Technical Communication No. 49. By G. V. Jacks, W. D. Brind and Robert Smith. Illus. 81 pp. (Commonwealth Agriculture Bureau, 1955.) 25s.

Although this detailed report on mulching is written mainly with large-scale farming in mind much interesting information applicable to both farm and garden can be gleaned from the introduction and Part I. Part II, "Mechanized Stubble—Mulch Farming", is, as one would expect, mainly concerned with farmers working on erosion- and drought-threatened soils. Much care and work has gone into this report and students and research workers will profit greatly by reading it.

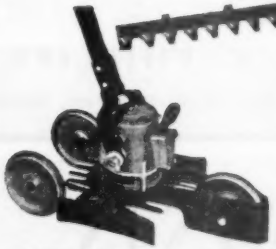
ORDERS FOR BOOKS

The Society does not sell any publications other than its own. Orders for books reviewed should therefore be sent direct to the booksellers and not to the offices of the Society.

The contents of this volume are copyright. For permission to reproduce any of the articles application should be made to the Council.

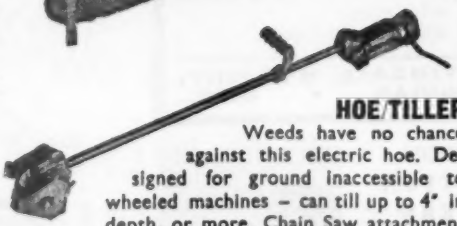
When you buy TARPEN you buy the best!

TARPENTRIMMER The Electric Hedge Trimmer with the clean secateur cut. Specially designed for outdoor use. Back edge of blade totally enclosed for safety.
Price from £16.0.0



GRASSMASTER Cuts toughest grass and weed growth inaccessible to scythes and mowers. Ideal for steep banks and orchards. Price of Grassmaster without wheels from £12.0.0, with wheels from £14.5.0. Convertible to Vergemaster at extra cost of £4.0.0

CHAIN SAW Cuts trees and logs up to 10" in diameter, yet weighs only 14½ lbs. Saw unit interchangeable with Hoe/Tiller attachment. Price of Saw complete £36.15.0. Hoe/Tiller attachment £15.15.0



HOE/TILLER
Weeds have no chance against this electric hoe. Designed for ground inaccessible to wheeled machines – can till up to 4" in depth, or more. Chain Saw attachment easily fitted. Price complete £35.0.0. Saw attachment £17.10.0

See these machines on STAND No. 13, Northern Road, CHELSEA FLOWER SHOW May 22nd–24th

** Power provided by mains, car battery or portable generator.*

Write for illustrated leaflet to:—

TARPEN ENGINEERING CO. LTD., 7 Ixworth House, Ixworth Place, London, S.W.3. Telephone: KENsington 3491 (7 lines)

Are there any
POTHOLES
OR WORN PLACES
in your **PATHS—**
DRIVE OR FORECOURT?

Then use MENDAROAD, the simple self-applied asphaltic material which can be Laid Cold with ordinary garden tools. Each bag is a complete unit providing a hard impervious surface ready for immediate use.
29/6 per cwt.

Packed in ¼ cwt. bags
Carriage paid
England & Wales

MENDAROAD

DO IT YOURSELF - AT A QUARTER THE COST

GEO. A. WEBSTER LTD.
3 BUCKINGHAM PLACE, LONDON, S.W.1
'Phone TATE GALLERY 8933

GARDEN CANES
Genuine Chinese Chungking Bamboo

Size	No. in Bale	USUAL BEST QUALITY 25	50	100	Per Bale
2 ft. Med.	2,000	1/6	2/8	4/9	80/6
3 ft. Light	2,000	2/3	4/6	7/1	132/-
3 ft. Med.	2,000	3/2	5/6	9/9	172/-
4 ft. Light	2,000	3/6	6/4	11/6	208/-
4 ft. Med.	1,000	4/10	8/9	16/4	146/-
4 ft. Heavy	500	7/3	13/-	24/4	107/6
4 ft. Ex. Heavy	500	9/9	17/6	32/6	148/-
5 ft. Med.	500	8/3	14/10	26/4	115/6
5 ft. Heavy	500	10/4	18/9	34/-	150/-
6 ft. Med.	500	9/2	17/4	32/4	132/6
6 ft. Heavy	500	12/-	22/-	40/6	176/-
7 ft. Med.	500	12/3	22/6	41/-	177/-
7 ft. Heavy	250	14/4	27/3	50/-	212/-
8 ft. Med.	250	16/9	31/-	56/6	124/-
8 ft. Heavy	250	16/10	33/-	60/-	135/-
10 ft. Med.	250	19/3	37/6	66/-	150/6
10 ft. Ex. Heavy	250	22/3	40/-	73/6	166/-

CARRIAGE PAID. For orders under £2 add 1/-, Scotland 2/-. Orders under £1 add 1/6, Scotland 2/6.

Demand was exceptionally heavy last year and Spring demand this year is already growing. Order yours quickly. We are the importers of these canes and maintain high quality yearly.

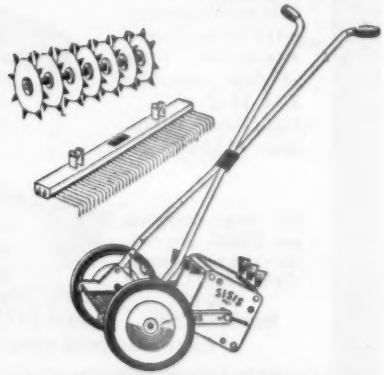
H. E. PHILLIPS LTD
King William Street, Coventry

STUART BOOTHMAN

has specialised in
ROCK GARDEN PLANTS
for over twenty years.
His illustrated catalogue gives cultural notes for each sort and guarantees to replace any that die within three months of planting.
Please ask for a copy.

NIGHTINGALE NURSERY, MAIDENHEAD • BERKS.

"SISIS" HAND LAWNMAN



The "SISIS" UNIVERSAL HAND FRAME and Implements for Piercing, Raking, Brushing and Rolling. All interchangeable without tools.

W. HARGREAVES & CO LTD
CHEADLE CHESHIRE

ALLWOOD'S CARNATION FLOWERS
direct from the largest growers, are the ideal gift for all occasions.
Selected colours or unique mixed shades.
From:
1 gn. to 5 gns. per box
Write for Catalogue

Allwood Bros LTD
Carnation Specialists

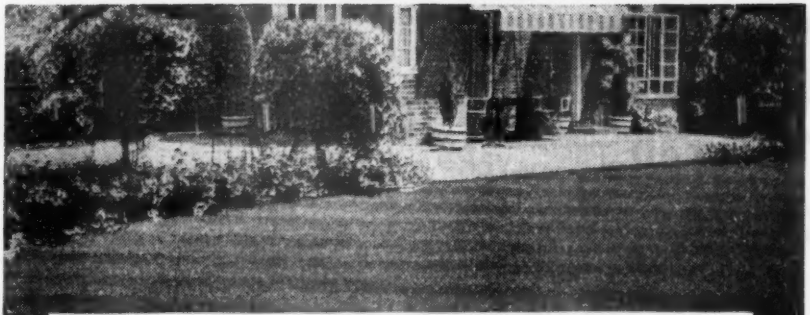
Cut Flower Dept.
HAYWARDS HEATH
SUSSEX
'Phone: Wivelsfield 232

manganese deficiency

The tip leaves of manganese-deficient potatoes are small and pale, tending to roll upwards. Tiny dark brown spots often appear on the leaves, especially along the veins. Extensive browning and rolling of the leaves, especially in the young foliage, may be observed when the deficiency is severe.

Information and literature may be obtained from our Agricultural Department. If you have difficulty in purchasing manganese sulphate locally, please communicate with us.

CHEMICAL & CARBON PRODUCTS LTD
14F NEW BURLINGTON STREET LONDON W1
Telephone REGent 1921 (five lines) Cables CHEMICARBO LONDON



'DICOTOX'*

KILLS WEEDS IN LAWNS

★ *Easy to apply* ★ *Economical* ★ *Showerproof*

Further information on 'Dicotox' brand selective weedkiller available on request.

MANUFACTURERS MAY & BAKER LTD *DAGENHAM ESSEX*

Telephone ILFord 3060 Ext. 342

* *trade mark* HA505

FLEXIBLE EARTH

OUR 68-PAGE BOOKLET AND SUPPLEMENT, ENTITLED

STAGGERING RESULTS

has 17 pages of cultural hints and 44 Funny Cartoons and a random selection of 107 Testimonials demonstrating the wide range of plants that benefit. This, together with a copy of

THE MAGIC OF CORNWALL
will be sent entirely free with all purchases

THE MISSING LINK
Mrs. F., Seaford, Sussex, writes:
"Please rush me 1 cwt. Flexible Earth, wonderful stuff, lost without it."

	£	s.	d.
Bag Size, No. 14 post free		6	6
,, ,, No. 28 carr. pd. nrst. stn. ...		13	0
,, ,, No. 56 ,, ,, ,, ,, ...	1	2	6
,, ,, No. 112 ,, ,, ,, ,, ...	2	0	0

Bag sizes 56 and 112 charged 3/- each extra, refundable on return.

CORNISH FLEXIBLE EARTH CO. LTD.
52 LANIVET, BODMIN, CORNWALL

PLANTSMAN recommends you to send now for this free **SEED AND PLANT CATALOGUE.** Contains over a hundred illustrations

DOBBIE & CO. LTD.,
DEPT. R. EDINBURGH 7.

DRON-WAL *Supreme* SPRAYERS & SYRINGES

The "MASTER" PNEUMATIC SPRAYERS

For ALL your spraying needs!

Simple, Easy Action, Brass throughout. Takes all insecticides, with band for underleaf spraying. Highly suitable for spraying hormones on Tomatoes or Seedlings in the greenhouse. See your Seedsman or Ironmonger.

Registered Design.

Send for Illustrated List

The PHILIP B. WALDRON CO.,
***Kings Road, Tyseley,* BIRMINGHAM, 11**

To be seen at 'Chelsea'

The 'Supra' Trolley Kneeler. Reg. Design 873960
(1) Slot-in-tray for 'Moler' trowel or hand-fork to assist gardener to rise.
(2) Rubber kneeling mat, 14" × 7" × ½".
(3) Cast aluminium frame, overall height 4".
(4) Hardwood rollers.
Move from plant to plant without rising or stooping
Post paid 39/6 (U.K.). Overseas 3/6 extra.

700 'Moler' Hand Tool. Reg. Design 876159
A unique new aid for Weeding, Lifting Bulbous Plants, Aeration, Raking
Ladies' Pattern (5 tines): 8/6, post paid (U.K.)
Ladies' Long-Handle (20 in. o/a.): 11/6, post paid (U.K.)
Men's Pattern (6 tines): 9/6, post paid (U.K.)
Men's Long-Handle (23 in. o/a.): 12/6, post paid (U.K.)
Our Illustrated list of Tools and Brushes free on request

COOKS *(Norwich)* **BRUSHES**
LIMITED
Makers since 1814
DAVEY PLACE, NORWICH, NORFOLK

SEE OUR STAND AT THE CHELSEA FLOWER SHOW

The

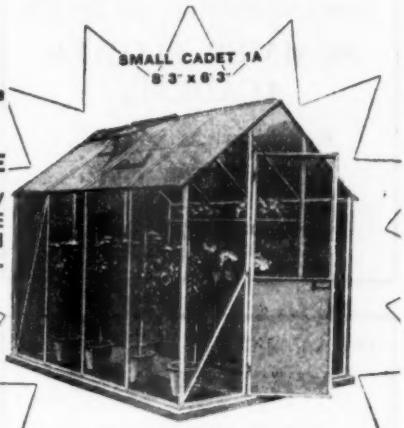
CRITTALL

'CADET' *RUSTLESS GREENHOUSE*

previously made in four sizes only, is NOW PRODUCED as an EXTENSIBLE GREENHOUSE in two widths, 6′ 3″ and 8′ 3″, and can be extended to ANY LENGTH in multiples of 2′ 0″ from 8′ 3″.

A few examples:—

Width	Length	Price
6′ 3″	16′ 6″	49 gns.
8′ 3″	16′ 6″	58 gns.
6′ 3″	30′ 10″	82 gns.
8′ 3″	30′ 10″	97 gns.



PRICE 28 gns

TO PRESENT 'CADET' OWNERS

You can now extend your Greenhouse with special units available in 4 ft., 8 ft. and 10 ft. lengths. Prices from 11 gns.

DEFERRED TERMS AVAILABLE. *FREE DELIVERY: ENGLAND and WALES*

Send for full details to:

THE CRITTALL MANUFACTURING CO. LTD., Horticultural Department C, Braintree, Essex

---

The most recommended Fertiliser in Horticulture . . .

SANGRAL

TEN-DAY FERTILISER

SOLUBILITY
Get a glass of clear water and into it sprinkle a little Sangral. In a few moments you will observe the granules dissolving without even stirring the water. In 4 or 6 minutes the water will become deep brown in colour and ready to give its vital nourishment to all plants.

QUICK RESULTS
Sangral contains all the essential constituents perfectly balanced for feeding plants. Some start feeding the plants immediately, others within six hours, and others again feed during the whole period of growth. In ten days it can transform your garden.

CANNOT HARM OR BURN
Sangral cannot possibly harm or burn even the most delicate seedlings.

EASY TO USE
Sangral is simplicity itself to mix and to use. You simply mix in COLD WATER, stir thoroughly and feed your plants as you water through the watering can.

ECONOMICAL
Sangral is extremely economical. A trial 8d. packet makes 12 gallons of liquid manure to feed approximately 120 plants.

Packets 8d. Cartons 2/6, 5/–, 12/6. Bottles 2/– and 3/6

MADE FAMOUS BY SUCCESS AND RECOMMENDATION

NATIONAL FLORAL ARRANGEMENT SOCIETY'S

SUMMER FLOWER ACADEMY

Royal Horticultural Hall,
Vincent Square, S.W.1

Friday, June 21, noon to 5 p.m. 3/6; 5 p.m. to 7 p.m. 2/6. Saturday, June 22, 10 a.m. to 5 p.m. 2/6

LIVE IN LUXURY

Belgrave Hotel, Torquay

First Class · Premier Position · Fully Licensed · Centre Sea Front · No Surcharges · Fine Sun Lounge

This lovely sea-front hotel has accommodation for one hundred and twenty-five guests. Has greenhouses for tropical, sub-tropical and house plants, and a keen display of these plants is made for the visitors' interest. The whole hotel abounds with plants and flowers in sun lounge and gardens.

Tariff and Brochure from
G. H. Gillin, F.R.H.S.
Phone 4818

OUR CATALOGUE OF

WATER LILIES AND AQUATICS

is full of helpful information on preparing a pond and choosing plants. Free copy sent on request. We send out very hardy stock grown out of doors in our own Nursery.

J. R. TAYLOR, Lily Hill Nursery, BRACKNELL . BERKS.

SMAIL'S GARDEN SHOP

Seeds for Garden or Indoor Culture
Climbing, Alpine and Hardy Plants
Flowering and Evergreen Shrubs
Fertilizers, Insecticides
Sankey's Garden Pots
John Innes
Composts

W. SMAIL
44/46 Palmer Street, Westminster, S.W.1
ABBey 4427
One minute from St. James's Park Station
Five minutes from R.H.S. Hall

THE MECHANIZED GARDEN CENTRE

Comprehensive display all makes of garden machinery
Stand No. 3
CROSSWAYS
CHELSEA FLOWER SHOW
BETTER GET IT AT
Godfreys
110 Marylebone Lane, W.1 (WEL. 6842) and Brenchley, Kent

SEE WHAT YOU SAVE
BY BUYING "MASKELLS"

Range of over 125 products offered at competitive prices, delivered anywhere in U.K. All Chemical and Organic Fertilizers including special products for chrysanthemums, dahlias, roses, sweet peas, and all flowers, fruit and vegetables supplied.
Use "Super" Hop manure to supply humus and plant foods economically. Sacks for 500 sq. ft. 12/9, "Large" (for 1,000 sq. ft.) 20/-, "Double Large" 35/-; Peats (from 14/- cwt., 28/- per bale), John Innes Composts 16/- cwt. Lawn Sand (combined weed killer and fertilizer), 28 lb. 13/6, 1 cwt. 40/-
Insist on Maskells and save £'s. Write for name of nearest supplier or send your order and we will arrange for it to be delivered.
Useful "Gardeners" Handbook free from
MASKELLS (1900), 68 Dirleton Road, London, E.15. Tel.: Maryland 2728

UNDER ROYAL PATRONAGE

THORNPROOF PRUNING GLOVES
DIGGING GLOVES
HEDGING GLOVES
SUPER QUALITY CAPE GLOVES
HOUSEHOLD CLEANING GLOVES
Latest Price List Now Ready
All sizes and as supplied to Fellows of R.H.S. since 1920

ADA EVERITT, Gardening Gloves
82b CONSTABLE RD., IPSWICH, SUFFOLK

OUT OF PRINT AND RARE GARDENING BOOKS
(Bought and Sold)
LIST ON REQUEST 6d.

WANTED: R.H.S. Journal, 1910–1956. Grey: Hardy Bulbs. Warner: Orchid Album, Vols. 4–11. Dunthorne: Fruit and Flower Prints. Curtis: Botanical Magazine, 1900–1935, and New Series from Vol. 40.

Also all gardening and orchid Books published before 1940. GOOD PRICES PAID
Write D. LLOYD,
4 HILLCREST AVE., CHERTSEY, SURREY

BENTLEY'S

CHRYSANTHEMUM FERTILISERS

Again Pave the Way to Success

At the 1956 N.C.S. Early-Flowering Show

The Crane Challenge Cup and the Johnson Challenge Cup. Won by G. Hughes, Esq., Newton St. Loe, Bath.

At the 1956 N.C.S. Late-Flowering Show

The Centenary Trophy, The Bentley Trophy and the George Prickett Challenge Trophy. Won by J. M. Bishop, Esq., Seacroft Holiday Camp, Hemsby.

The Holmes Memorial Challenge Cup (for 18 incurved blooms). Won by G. Hughes, Esq., Newton St. Loe, Bath.

The Keith Luxford Challenge Cup and the Holmes Memorial Challenge Cup (for 12 large exhibition blooms). Won by D. Tyson, Esq., Church Farm, Hemsby.

All the above exhibits were fed exclusively WITH BENTLEY'S CHRYSANTHEMUM FERTILISERS

Complete Catalogue and Price List, Post Free on request.

JOSEPH BENTLEY LIMITED

Horticultural Manufacturing Specialists

BARROW-ON-HUMBER, LINCS.

GARDEN

DESIGN CONSTRUCTION RENOVATION

undertaken by experienced designers and skilled craftsmen in any part of the country.

We prepare fully detailed Planting Plans for Trees, Shrubs and Plants of all descriptions.

Our garden exhibits have for over half a century gained the highest horticultural honours and awards, including many gold medals.

ENQUIRIES WELCOMED

WALLACE & BARR

THE OLD GARDENS

TUNBRIDGE WELLS

WALTER BLOM & SON LTD.

(of Holland)

Coombelands Nurseries, Leavesden, Watford, Herts.

QUALITY AND SERVICE

BLOM FOR DAHLIAS

You will be most welcome to visit our Sunninghill Park trial grounds, situated on the edge of Windsor Great Park, any time convenient, as the Gardens are open all day and every day, including Sundays. We shall be pleased to send a copy of our FULLY ILLUSTRATED CATALOGUE on request.

UNWINS OF HISTON

SWEET PEA PLANTS

Pot Grown, Strong Well-Hardened Off

Ready for delivery from the end of April until the third week in May, weather permitting.

COLLECTION OFFER

8 First-class Varieties, selected by us, 6 plants of each (48 in all), separate and named for **12/6** post free—or 12 plants of each variety (96 in all) for **24/-** post free.

NEW CULTURE BOOKLET **12/6**

"Sweet Peas, their Culture in a Nutshell," by Charles Unwin. All the basic fundamental questions answered in a handy 16-page booklet. 6d. post free.

NEW GARDEN SEED CATALOGUE

Send to-day for our illustrated catalogue of Flower and Vegetable Seeds, Gladioli, etc. Free on request.

W. J. UNWIN, LTD.

HISTON **CAMBRIDGE**

ORCHIDS

BUY YOUR ORCHIDS AT A REASONABLE PRICE FROM THE ACTUAL PRODUCERS

CYMBIDIUMS, CYPRIPEDIUMS, CATTLEYAS, etc., ODONTOGLOSSUMS and CURIOSITIES

Flowering size plants from 20/-

Our Illustrated Booklet "The Simplicity of Orchid Growing" will be sent FREE ON REQUEST.

MANSELL & HATCHER, LTD.
Dept. R.H., Cragg Wood Nurseries,
RAWDON, LEEDS, Yorkshire.

THE
SOUTHERN TREE SURGERY
COMPANY

Arborists and *Tree Surgeons*

Byways,
Woodham Lock,
West Byfleet
Surrey
(Byfleet 2739)

70 Tower Street,
Winchester,
Hants
(Tel. 3972)

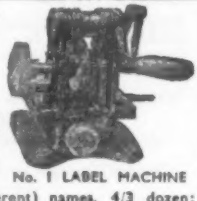
Advise on, estimate for, and carry out all tree work

THE "VALE" WANEY ELM
GARDEN SHED

7 ft. long × 5 ft. wide.
Cash £15.19.0 or 64/-
Deposit and 12 monthly payments of 24/9

"VALE" WANEY ELM
GARAGE
12 ft. long × 8 ft. wide.
Cash £30. 10. 0 or
£6. 2. 0 deposit and 12 monthly payments of 45/9.
Prompt Despatch. Send for Free Lists.
CARRIAGE PAID home England and Wales mainland
Also Greenhouses, Fencing and Ladders.
VALE COUNTRY PRODUCTS
(Dept. R), Wantage, Berks.

'SERPENT'
INDELIBLE (LEAD)
LABELS
LAST 100 YEARS
NEAT, LEGIBLE, SELF-AFFIXING ADAPTABLE, COMPLETELY RELIABLE



No. 1 LABEL MACHINE

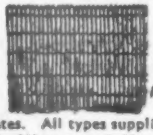
Printed with *any* (different) names, 4/3 dozen; 34/- 100. Label-printing Machines from £3 19s. 6d. Send for lists and FREE SAMPLE (*any* name). Complete Label-machine Outfits, from £5 5s. 0d., postage 3/-, make IDEAL GIFTS

SERPENT LABEL WORKS
ROCKBEER, EXETER

ECLIPSE PEAT
available for Exhibitors
at the
CHELSEA SHOW
Special Service Delivery
THE ECLIPSE PEAT CO., LTD.
ASHCOTT, Near Bridgwater, SOMERSET
Tel. No.: Meare Heath 282

"RIVIERA" SCREENING
Is split ¾" dia. bamboo bound nearly close by galv'd wires in 10-yd. rolls—49", 59" and 69" wide.

IDEAL FOR INEXPENSIVE GREENHOUSE BLINDS, ETC.



SIGHT PROOFING OPEN WIRE OR IRON FENCES, ETC.

Fencing and Gates. All types supplied and fixed. Oak Pale Panels, Wovenwood, Hazel and Osier. Hurdles, Chestnut Fencing, Teak Garden Furniture
GERALD GILMER LTD.
TEL.: 1640/1 LEWES EST. 1922
And at BISHOP'S WALTHAM. Tel.: 271

"SHAMROCK" BRAND
IRISH
MOSS PEAT
Finest quality only. Sterile, weed and pest free. Genuine Sphagnum Moss origin with an ideal granulation and highest moisture absorption rate.

Full details-leaflet and prices from
IRISH PEAT MOSS (SALES)
59 Park Street, Bristol, 1

—"CRAVEN"—
INSECTICIDES AND FUNGICIDES

"MYCOL" COLLOIDAL COPPER AND "DOUCL" D.D.T. EMULSION FOR CHRYSANTHEMUMS

DOUBLE STRENGTH SLUG PELLETS FOR SLUGS AND SNAILS

W. J. CRAVEN & CO. LTD
PHONE 2631-2 EVESHAM

Chase Aids FOR YOUR GARDEN

Chase
HANDIBARROW

Light!
STRONG!
Handy!

Get a HANDIBARROW–*NOW*. Easy to fill and empty. Light, easy to manœuvre. Can be wheeled with only one hand and will not topple over.

Price – **ONLY 67/6**

Chase IMPROVED
TRICKLE IRRIGATION

The cheapest and easiest system of all. One day's watering sufficient for a week, and *you can water safely in full sunlight*. Easy and quick to move. The ideal set for amateurs—64′ line with filter and regulating valve—£3 . 17 . 6.

Write for full details.

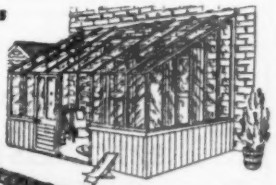
WATERS WHILE YOU WORK!

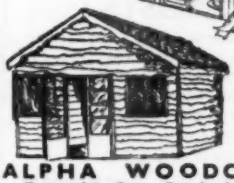
CHASE PROTECTED CULTIVATION LTD. 38(o) Cloche House, Shepperton, Middlesex

---

Conservatories

Garden Dens . .





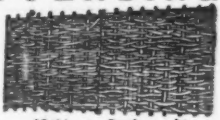
Garages, greenhouses, loose-boxes and garden buildings of all descriptions.

Please send for Illustrated catalogue

ALPHA WOODCRAFT LTD.,
Dept. 24, Star Road, Hillingdon Heath, Uxbridge, Middx. *Tel. HAYes 0657*

WATTLE FENCING

An Economical Dividing Fence
Close Woven
Excellent Windshield



IN 6 FEET LENGTHS	3′ high ...	12/11	Stakes	1/-
	4′ ,, ...	17/2	,,	1/3
	5′ ,, ...	22/6	,,	1/6
	6′ ,, ...	27/11	,,	1/9

Reduction dozen lots. Despatch 10–14 days.
Carriage Paid Stn. (200 miles)
ORDER NOW—*or send for free complete catalogue of Fencing, Gates, Garden Furniture etc.*

DAVIDS RURAL INDUSTRIES LTD
(Dept. R), 15 Moreton St. London, S.W.1
(Late of Ebury St.)
Tel : Tate Gallery 8332

JUSTIN BROOKE LTD.

WICKHAMBROOK, Nr. NEWMARKET, SUFFOLK

We invite you to visit our nurseries and fruiting orchards at any time, including Sundays—preferably by appointment.

We have a large acreage of nursery stock, including Peaches, Nectarines, Apricots, Cherries, Apples, Pears, Plums and Figs.

In our fruiting orchards you can see the results obtained by planting similar stocks of all these fruits; and you can see the results at various stages of growth.

PEACHES ON PEACH STOCK

Telephones:
In office hours—Wickhambrook **200** Out of office hours—Wickhambrook **304**

SITE No. 2 CHELSEA SHOW

Watch out in the marquee for your most consistent R.H.S. Hall EXHIBITOR, against the wall facing West, near main gate.
Here will be seen shrubs *in season* and of the stamp we normally send out. For service and quality be advised by:—

Burkwood & Skipwith Ltd.
The Shrub Specialists
Park Road Nurseries, Kingston, Surrey
Telephone: KIN 0296

BAMBOO CANES

All per 100	A. Thin s. d.	B. Med. s. d.	C. Stout s. d.	D. Ex. Stout s. d.
12 in.	2 6	3 0	4 0	5 0
18 in.	3 0	4 0	5 0	6 0
2 ft.	4 0	6 0	7 6	10 0
2½ ft.	5 0	7 0	10 0	15 0
3 ft.	7 6	10 0	15 0	20 0
3½ ft.	10 0	12 6	20 0	25 0
4 ft.	12 6	15 0	25 0	30 0
5 ft.	25 0	30 0	35 0	40 0
6 ft.	30 0	35 0	40 0	45 0
7 ft.	40 0	45 0	50 0	60 0
8 ft	45 0	50 0	60 0	70 0
10 ft.	50 0	60 0	70 0	80 0

Orders up to £1 add 2s. post. Carriage paid nearest station. C.W.O.
THE BRITISH BAMBOO CANE CO. LTD.
52 LANIVET, BODMIN, CORNWALL

HORTICULTURAL THERMOMETERS

MAXIMUMS AND MINIMUMS,
STERILISERS, HOTBED,
WET AND DRY HYGROS., ROOM
Send for Descriptive Leaflet and Prices
Trade Enquiries Invited

W. BLACKMAN LTD.
277-9 GOSWELL ROAD, E.C.1

'HART'
Certified
GRASS SEED
Treated against birds and pests
Cash with order, carriage paid, bags free.
"Standard" Mixture of Sheep's Hard and Red Fescue, Timothy S.23, S.24, Devon Eaver and S.S. Ryegrasses. 1-14 lb. 3/3 per lb.; 15 lb. and upwards 2/9 per lb. (cwt. rate).
Free on request: (a) Grass Seed Mixtures Analysis Chart; *(b)* Bulletin of Fertilizers and Horticultural Sundries.
Pre-seeding Base Fertilizer (2 oz. to the sq. yd.) 9d. per lb. for minimum 14 lb. and upwards. Supplied only by:—
MAXWELL M. HART (LONDON) LTD
Trial Grounds: Winnersh, Wokingham, Berks.
Phone: WOKINGHAM 1121

KNIGHT'S NURSERIES LTD.
HAILSHAM, SUSSEX
Tel. 454

For Choice Herbaceous Plants

in great variety

Catalogue post free on request

Buy your
AFRICAN VIOLETS
FROM THE
SPECIALISTS
We have selected over 50 of the finest varieties available. Mostly recent American introductions, tried and tested on our Nurseries. Sure-to-please sorts. Seeds, Leaves, Small Plants, Flowering Plants. Available March-September.
Send stamped addressed envelope for list please.
W. C. WICKS LTD.
Mapperley Nurseries, Nottingham
Growers of good plants since 1880

KETTERING LOAM
As supplied for over 30 years to the Leading Horticulturists. Hand-Dug Yellow Fibrous, from our own virgin fields. Also Bedfordshire Silver Sand and Noted Nottingham Marl.
Quotations for any quantity, delivered by Rail or Road Transport to your door.
KETTERING FUEL CO. LTD.
28a STATION RD., KETTERING, NORTHANTS
Telephone: 3059

SAVE MONEY
By Buying Young Plants
During the summer we shall have a large stock of young plants of Primulas, Meconopsis, Gentians, Delphiniums, Phlox, Lupins, Ericas and many other Alpines and hardy plants which we can supply at half our usual prices for grown plants of the same varieties. These young plants are exactly the same as those we shall ourselves grow on and for which full retail prices will be charged in the autumn and following spring. The young plants will be large enough to go out into their flowering quarters, or you can put them in pots, boxes or frames for autumn or spring planting. Send 2d. for List.
H. G. & P. M. LYALL, Bricket Wood, Watford, Herts. Garston (Herts.) 2098

MALATHION IS FATAL
to Aphids (Green and Black Fly), Mealy Bugs, Red Spiders, Thrips, Leaf Hoppers, White Fly and other destructive garden insects.

What have YOU heard about MALATHION

the NEW all-purpose garden insecticide?

This year you'll be hearing a lot about MALATHION—the remarkable new all-purpose insecticide that controls practically every garden insect. At last, gardeners can use just one insecticide—MALATHION—to solve almost all their insect problems. MALATHION insecticides are so easy to use and so certain in results. Large-scale growers successfully use them . . . home gardeners use them too for ridding plants of hosts of destructive insects—particularly aphids (green and black fly), mealy bugs, white fly, red spider, thrips and leaf hoppers. This year, safeguard your garden with MALATHION.

Ask your local garden store for an insecticide containing

MALATHION

For flowers, fruit trees, vegetables and ornamentals

CYANAMID 1907 50 1957

AGRICULTURAL CHEMICALS DEPARTMENT

CYANAMID OF GREAT BRITAIN LTD.

BUSH HOUSE, LONDON, W.C.2

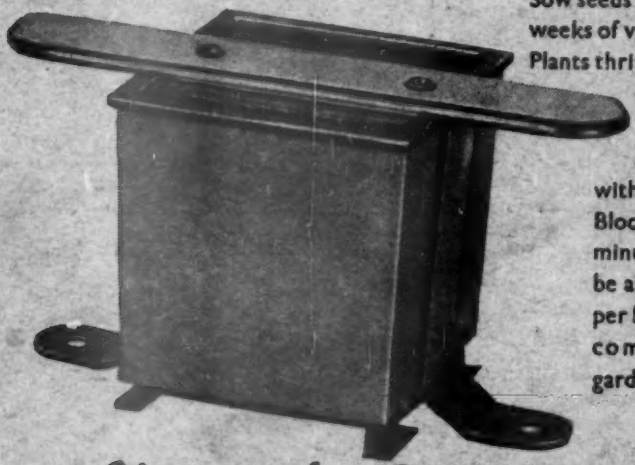
The best way with Seedlings

get a

FRED STREETER'S

Special Design

SOIL BLOCK MAKER



Sow seeds in soil blocks and save weeks of valuable growing time. Plants thrive when you plant out—the delicate root growth is undisturbed. Make them with Fred Streeter's Soil Block Maker—after a few minutes' practice you'll be able to make over 100 per hour using any potting compost or ordinary garden soil.

Cheaper than Pots

PRICE 4/6

Obtainable wherever Plantoids are sold. In case of difficulty write to :—

PLANTOIDS LTD., BROMLEY, KENT

One of the GRAHAM FARISH Group of Companies

Printed by Spottiswoode, Ballantyne & Co. Ltd., London and Colchester